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CONTENTS

	PAGE
Editorial Notes	369
Lord Inman's Intentions	371
Reconstruction of the Italian Railways	371
Transport Conditions in Ceylon	372
Passenger Traffic Behind the Iron Curtain	372
Plymouth Railway Centenary	373
Railway Companies Vindicated	373
Letters to the Editor	374
The Scrap Heap	376
Overseas Railway Affairs—South Africa—Rhodesia —Switzerland—France	377
Locomotive Cylinder Design—I	378
Power Signalling on the B.B. & C.I.R.	381
Rapid Renewal of Multiple-Span Bridge	384
Personal	387
Passenger Traffic-Density in the Provinces	389
Moving the Londoner	389
Extension of Cheap Rail Travel Facilities	390
Chippenham Industrial Exhibition	390
Staff & Labour Matters	392
Questions in Parliament	392
Midland Railway Co. of Western Australia Ltd.	393
Notes and News	394
Railway Stock Market and Table	396

THE PROBLEM OF RAILWAY PASSENGER FARES AND TRAIN SERVICES

A suggested plan for equalising
passenger travel over both rail
and road services

BY J. H. LAUNDY

Formerly Audit Accountant, Southern Railway

PRICE ONE SHILLING

THE RAILWAY GAZETTE
 33, TOTHILL STREET, WESTMINSTER, S.W.1

Swiss Travel Authorisation

MANY prospective visitors to Switzerland this year may be puzzled by the questions of the Swiss Authorisation Office regarding their hotel bookings. However, this procedure on the part of the Swiss authorities is, in fact, both reasonable and sensible. The difficulty arises from the fact that the Swiss franc is the "hardest" currency in the world. In other words, it is in greater demand than any other currency on the international market. Last year the sterling area failed to balance its trade with Switzerland. The logical development from this state of affairs must be a decline in the total of imports from Switzerland to the sterling countries. Tourist traffic is an import and is liable to suffer with the other imports from Switzerland. The Swiss Government has taken the view that the tourist trade is one of the essential industries of Switzerland. It has, therefore, insisted, when discussing trade arrangements with Great Britain, that a certain proportion of the available balance of Swiss francs must be spent on the tourist trade. At the same time, the Swiss Government is quite naturally anxious that this money should find its way into the hotels, railways, and other organisations which provide facilities for tourists, and should not be spent in the shops on goods which have in all probability been imported by the Swiss themselves. It has been said that the difficulty might never have arisen if it had not been for those British visitors who travelled to Switzerland since 1946 partly for the reason of purchasing goods which are in short supply at home. This may have been partly true in 1947, when the individual allocation was £75, but when it was reduced to £35 little margin was left for spending in shops.

* * * *

Road Approach to Co-ordination

When Major-General G. N. Russell, Chairman, Road Transport Executive, addressed the Metropolitan Section of the Institute of Transport last Monday, he indicated how his Executive is viewing the problem of co-ordination of transport. He said that when a consignor stipulated that his goods should be carried by road, he meant that he desired a combination of features attractive to him, and which he believed were most likely to be achieved by the use of road transport for particular goods and journeys. These features might include freedom from damage, simpler packing, and low cost, which had been made possible by the intensive development of road transport during a relatively short period. They were comparative to the consignor's experience elsewhere, and had been accentuated either by the difference in legal obligation as between one form of transport and another, or by the intense internal competition between a great number of small undertakings within the road transport industry. When the consignor could be assured of the same, or better services than those he now attributed to road transport, he would cease to concern himself as to how his goods were moved. Then the British Transport Commission could use the different forms of inland transport in combination so as to produce the best service at the lowest cost.

* * * *

Engineers and the Public

The establishment of an organisation concerned with the interests of engineers in general, and their relations with the community, has for some time appeared desirable to a number of leading members of the profession, with the result that several years ago the Engineers' Guild was formed. The Guild is now seeking considerably to increase its membership and to widen its activities and organisation; and at a recent press conference some of its aims were described by Mr. W. S. Graff-Baker, Vice-Chairman, and Mr. O. V. S. Bulleid, Mr. C. L. Champion and Mr. J. H. W. Turner, Members of the General Council of the Guild. It is maintained by the Guild that activities on behalf of engineers from a non-technical point of view cannot be undertaken by the Institutions in view of the restrictions imposed by their charters, and that it is necessary to look to a separate organisation to further their general interests, but that its aims in no wise conflict with those of the Institutions. The Guild emphasises that it is not a trade union; it is seeking registration under the Companies Acts, the form of incorporation adopted by the B.M.A. and many other professional associa-

tions. The composition of its General Council was given in our Personal columns last week, and further details of its organisation appear elsewhere in this issue.

Transport Officers' Conference

The British Transport Commission has arranged a conference of officers, drawn from all sections of its undertaking, to take place at Felixstowe on April 7 and 8. The main purpose of the conference is to enable representative officers of all the Executive bodies to study, and discuss among themselves, problems connected with the integration of all forms of transport, and other matters of common interest throughout the undertaking of the Commission. The Members of the Commission, including the Chairman, Sir Cyril Hurcomb, and the Chairmen and Members of the five Executives will take part in the meeting.

Restoring Cheap Travel Facilities

A further instalment in the restoration of pre-war cheap travel facilities was announced by the Railway Executive last week-end. Sir Cyril Hurcomb, Chairman of the British Transport Commission, in his address to the Mansion House Association on Transport on March 25, had indicated that an announcement would shortly be made of a widening of the scope of reduced fare facilities, which would embrace cheap day tickets, day excursion bookings, combined tickets for holiday circular tours, and holiday runabout tickets. These new facilities will come into effect on Monday next. Details are given elsewhere in this issue. The holiday runabout tickets give unlimited travel over specified areas in holiday districts. The restoration of this facility is a very short step along the line towards the proposal put forward in our issue of September 3, 1948, when it was suggested that all-stations season tickets on British Railways might be issued. Now that the State owns the whole British railway system it can make little, if any, difference to the proprietor whether a fare paying passenger occupies the seat in a train in Cornwall or Caithness.

Food Service on British Railways

During the last year or so there have been so many complaints about the food on trains and in buffets that it was a wise move on the part of Lord Inman to announce recently that efforts are being made for early improvement. The public has always wondered why it is not possible for the food service on the railways to be as efficient and varied as in the organisations provided by certain well-known caterers, and up to the present it has received little to encourage it in the belief that improvements are close at hand. The provision of food boxes will be a great boon to travellers, and we recall the excellent small lunch cartons put up by the former Great Western Railway some years ago, when, for the modest sum of 1s. 6d. a complete miniature meal could be enjoyed; moreover, it was appetisingly packed. An extension of such a service is a step in the right direction and we would like to see the re-appearance of more platform trolleys with hot drinks.

Electronic Control of Machine Tools

A misleading first impression that is gained sometimes from an inspection of electronic apparatus for controlling machine tool motors is that its bulk outweighs its advantages. This point of view was referred to in a lecture given recently by Mr. C. F. Machin, of the G.E.C. Research Laboratories, when he discussed motor control in the course of a very wide survey of electronic applications in general. Mr. Machin demonstrated the fact that most of the space in a typical electronic control cabinet was occupied by the rectifying apparatus, and reminded his audience that rectification at some stage normally would be necessary in any type of installation using d.c. motors. The actual controls in an electronic system were very compact and light to manipulate, and the method lent itself to automatic variation of speed at different stages in the cycle of operations of the machine tool to which it was applied. A demonstration was given of speed control of a motor driving a generator, combined with auto-

matic limitation of the motor current in the event of an overload. Mr. Machin briefly described a large planer at the G.E.C. Witton Engineering Works which has been installed with electronic control in place of a Ward-Leonard system, the equipment providing dynamic braking of the table as well as speed and acceleration control.

Girder Renewals en Masse

The ordinary method adopted for bridge-span renewals, whereby the old spans are rolled out transversely and the new ones rolled in to take their place, was recently carried a step further at the Mackinaw River Bridge on the New York, Chicago & St. Louis Railroad. In one operation taking only 19 min., four of the original spans, forming a 540-ft. length of the superstructure, were rolled out, and simultaneously four new spans of similar lengths were rolled into their places. Both these lengths of superstructure were complete in all respects, including track, and a single locomotive crane was used to haul both together. Points of interest in this renewal, which is described elsewhere in this issue, are the careful general preparation for so rapid a change, including the arrangement of the rollers in frames, the inverted-rail temporary continuous bridge seats for both old and new superstructures, and the hauling arrangements. As the bridge is at the bottom of a dip in the gradient profile, the rail level over it has been raised by 1 ft. 8 in., thereby not only easing the approach gradients, but also enabling the new deck truss spans to be deeper by that dimension without disturbing the sound masonry substructure. This was a valuable consideration in view of the fact that the new bridge had to be up to Cooper's E.60 loading, whereas the old spans were up to E.30 only. The approaches were lifted 1 ft. before the girder renewal—when the old spans were packed up that distance—and 8 in. afterwards.

Transport in North-East Aberdeenshire

The branch from Ellon to Boddam, Aberdeenshire, was closed to all traffic on January 1, and arrangements were made for goods traffic to be carried by road; the passenger services had been withdrawn on October 31, 1932. It is a curious situation that nationalised transport has thus been withdrawn from this corner of Aberdeenshire, with the exception of the main line to Peterhead, as the local bus company which serves the area between Aberdeen and Fraserburgh is James Sutherland (Peterhead), Limited, and not a unit of the S.M.T. group. The rail terminus at Boddam was only 3 miles south of Peterhead, and, had it been possible to extend the railway to that town (as was hoped, at one time), the history of the branch might have been very different. When the line was opened by the Great North of Scotland Railway on August 2, 1897, it was expected that Cruden Bay, on the Aberdeenshire coast, would develop into a popular holiday resort, but this sanguine forecast was never fully realised. The railway operated an electric tramway from 1899 to serve the Cruden Bay Hotel, but this ceased to carry passengers in 1932, although it survived for baggage and hotel stores until 1941.

Winter Passenger Traffic in the Provinces

Elsewhere in this issue we publish some notes received from a correspondent on the intensity of passenger traffic at Brighton even in winter-time conditions. We can testify to the fact that in at least three different quarter-hour periods from seven to nine full trains disgorge hundreds of passengers at the central station in an almost continuous stream. These crowds are quite unlike the summer holiday throngs; there are virtually no children, very few women, and the men are mostly hurrying to catch buses at the adjacent bus station. They include business men from London and elsewhere, large numbers of building operatives working on many housing schemes all over the county, sailors and marines from Portsmouth, and railway employees from Lancing and other places. At one period during the war, Brighton was sending about 1,200 building tradesmen daily to South London boroughs for first-aid repair work, and the habit of working some distance away from home seems to have clung to many. At any rate, the sight of these hurrying crowds, who can hardly wait

until the trains stop, is certainly impressive and reminiscent of Victoria in almost rush-hour conditions. We agree with our correspondent that it would be of interest to know how the traffic at Brighton compares with that at other provincial centres in winter-time.

* * * *

First Junction Indicator in India

The junction indicator, which for some time has been a feature of the power signalling installations in Great Britain and has much simplified the signal aspects at a number of locations, has found its way to India where, as will be seen from Mr. H. C. Towers' article in this issue, the first was put into service on September 25, 1948, at Mahim, on the Bombay suburban lines of the B.B. & C.I.R., which has the largest colour-light and power signalling installation of any railway in that country. Its operation has proved entirely satisfactory and such indicators will be used on all new work where circumstances permit of their being adopted. The controlling circuits are the same as those used on British Railways and the change from red to proceed in the associated colour-light signal is subordinated to the correct functioning of the indicator when a diverging route is set up. As in British practice, no indicator sign is shown for the direct route, but in Belgium, where a similar system has now been adopted, a vertically displayed sign is given.

* * * *

Lord Inman's Intentions

LORD INMAN, Chairman of the Hotels Executive, British Transport Commission, with other members of the Executive, has been touring railway centres and visiting hotels to study the problems facing his Executive. The size of that problem may be gauged from the fact that the Hotels Executive is responsible for 65 hotels with 5,000 bedrooms; 1,381,994 nightly visitors were accommodated last year when 6,564,238 meals were served. In addition there are 476 refreshment rooms where food, ranging from a full meal to a cup of tea, is provided. The number of hot beverages supplied is some 75,000,000 a year, and sandwiches, snacks, etc., total over 25,000,000. A restaurant car service is provided on 483 trains and about 10,000,000 meals a year are served in them.

Last week Lord Inman outlined some of the improvements he hopes to effect in railway catering services. The Hotels Executive plans to re-open a number of hotels. Restoration work is in progress at the Station Hotel, Aberdeen, and the Zetland Hotel, Saltburn. The Great Northern Hotel, Peterborough, is being rebuilt at a cost of £40,916. Work is to commence shortly on the Turnberry Hotel, Ayrshire. The Executive has an agreement with Bath Corporation to spend £100,000 on structural alterations and improvements in connection with the Pump Room Hotel. Gleneagles Hotel, Perthshire; Welcombe Hotel, Stratford-on-Avon; Manor House Hotel, Moreton Hampstead; Dornoch Hotel, Sutherland; and Midland Hotel, Morecambe, have been rehabilitated after de-requisitioning and have been re-opened to the public. Plans are being prepared to overtake arrears of maintenance in the remaining hotels.

In an endeavour to improve catering facilities on trains Lord Inman said that the Executive was introducing a narrow trolley which would be used in corridor trains for the service of beverages and snacks. These trolleys were already in use in the North Eastern Region and would gradually become common throughout British Railways. Luncheon and dinner boxes had also been introduced at first on the Western Region. These would cost 2s. and 3s., respectively, and example boxes contained (luncheon) roll and butter, cheese, trifle, tongue sandwich and tomato; (dinner) meat pastie, tongue sandwich, blue Danish cheese, roll and butter, biscuits, fruit jelly, and pear.

In dealing with refreshment rooms considerable difficulty arises from the fact that the majority are housed in very old structures. It is intended to modernise these rooms as conditions permit and a complete survey of the refreshment rooms has been prepared. New methods of catering for passengers in refreshment rooms are being examined. The introduction of a cafeteria service and the separation of licensed from unlicensed bars is favoured. Other proposals under

examination are for combined waiting and refreshment rooms, for new counter units for serving hot soup, and modern equipment for the sale of refrigerated soft drinks.

The following schemes of modernisation have been carried out:—

Colchester (Down Side)
Ipswich (Up Side)
Newcastle Central

Leicester, London Road
Liverpool Street, East High Level
Edinburgh

and the following have been approved:—

Sheffield Midland
Glasgow, Queen Street
Stratford

Darlington
Brockenhurst
York No. 2
Leeds City
Oban

Schemes in course of preparation include:—

Liverpool Street (No. 9 Platform Buffet)
(Combined Waiting and Refreshment Room)

Hull Paragon
Harrogate
Doncaster
Liverpool Street Grill Room
Wymondham
Kings Cross (Combined Waiting
& Refreshment Room)
York (Trolley Service)
Wakefield Westgate
Bolton
Preston
Rugby
Wolverhampton
Manchester Victoria
Birmingham
Cheltenham
Inverness
Charing Cross

Leeds Central
Dundee
Cambridge
Dereham
Grantham
Southport
Warrington
Liverpool Central
Liverpool Exchange
Stoke (Up Side)
Carlisle
Crewe
Chester
Gloucester
Perth
Paddington
London Bridge (Central Section)

Lord Inman pointed out that the number of restaurant car services on regular trains, which were 360 in 1947, would be raised to 588 in this year's summer timetable. Further extension of regular restaurant car services would be made as circumstances permitted. As soon as possible restaurant car facilities are to be provided on relief express trains, and it is also hoped to restore catering facilities on excursion trains.

Lord Inman gave some interesting figures as to the make-up of costs of meals on trains. The standard charge for luncheon or dinner is 4s. Of the cost of each meal wages account for 2s. 0½d., repairs and maintenance 3½d., fuel and light 3d., National Insurance, stationery, soap, cleaning materials, uniform, etc., 3d., giving a total of 2s. 9½d., and leaving 1s. 2½d. for the cost of the meal. The present cost of the meal Lord Inman gave as 1s. 8d. The fact that there is a profit of about 8d. a meal on drinks enables the service to be provided without running at a loss, but if, to meet the criticisms of the frequent appearance of cod and sausages on dining car menus, halibut or turbot was served at luncheon, the cost of the meal would be raised to at least 2s. or 1s. 10d. respectively. If at dinner salmon, chicken or turkey was served, the meal would be increased to at least 2s. 10d., 3s. 2d., or 3s. 9d. respectively. He added that not the least of the difficulties facing railway catering was the fact that the meat ration per passenger per week worked out at ¾d. and the cheese ration was 70 oz.

* * * *

Reconstruction of the Italian Railways

AT the Great Eastern Hotel, London, last week, the Inter-Frigo Conference, dealing with problems connected with refrigerated wagons and transport, was opened. The Italian delegation was headed by Signor G. di Raimondo, Director-General of the Italian State Railways, and Signor E. Linzi, Director-General of the Compagnia Italiana Turismo. Before the Conference was opened, Signor di Raimondo gave some details of the success which has attended the reconstruction of the Italian State Railways since the war. Sixty per cent. of the whole system was either seriously damaged or completely destroyed, and of the electric system 90 per cent. was destroyed. Damage amounting to about 85 per cent. was suffered by rolling stock, and to about 75 per cent. by locomotives. Workshops, depots, and so forth suffered damage of the order of 80 per cent., and in all it is estimated that the total damage was equal to £450,000,000.

A commencement on the work of rehabilitation was made by Allied troops, and Great Britain supplied fuel, raw materials, engines, rolling stock and plants of various kinds. Today Signor di Raimondo puts the reconstruction of the railways as at least 85 per cent. complete. Railway traffic has reached 90 per cent. of the pre-war figure. Marked progress

has been made in the electrification of existing lines and those which existed before the war are now almost completely repaired. In addition, further mileage has been turned over to electric traction, such as the Milan-Domodossola and the Firenze-Pisa lines. A commencement has also been made in the electrification of railways in Sicily, such as the Messina-Palermo and Messina-Siracusa lines.

At the end of the war Italy had left only 1,000 coaches; today it has 4,000, and by next year it is expected that this number will have been raised to 5,000. Every effort is being made to encourage tourist traffic, and the Italian Railway administration is co-ordinating the development of Italian tourist agencies, both in and outside the country. A regular service of up-to-date motor coaches has been formed running to and from the most important tourist centres.

Transport Conditions in Ceylon

IN June, 1948, Mr. D. R. Rutnam, O.B.E., I.C.S. (retired), was appointed by the Minister for Transport & Works, Ceylon, to survey the position of transport in the Dominion, with special reference to road and rail, to make recommendations with a view to (a) improving the main forms of transport, and (b) effecting better co-ordination and eliminating wasteful competition, to formulate a plan for development and to suggest the framework of the necessary legislation. Of the two volumes of Mr. Rutnam's report* the first has appeared, dealing with the Ceylon Government Railway and the Port of Colombo.

The C.G.R. consists of 807 m. of 5 ft. 6 in. and 106 m. of 2 ft. 6 in. gauge lines, all steam operated with the exception of a number of diesel railcar passenger services. Since commerce and agriculture, including tea, rubber and coconut plantations, are mainly confined to the centre and south east, the flow of traffic to and from Colombo tends to afford hauls of 100 m. or less. All traffics, especially tea and rubber from estates to which it is not economic to construct sidings, are therefore extremely vulnerable to road competition. The following figures show the change in the situation since 1925:—

	1924/5	1946/7
Route mileage—5 ft. 6 in. ...	674	807
2 ft. 6 in. ...	117	106
No. of passengers ...	10,201,173	26,004,880
Freight tonnage ...	1,404,195	1,344,846
Total train mileage ...	3,732,977	4,601,697
Railcar mileage ...	84,897	254,426

Increase in passenger traffics is due not so much to the growth of population as to increased wages and the rise in the standard of living; road competition for passenger traffic is intensive. Freight traffic has not kept pace with the economic development of the island, and is being lost to the road; thus despatches by rail of tea from 87 representative estates for three months of 1948 were 730 tons, compared with 2,500 tons for the corresponding period of 1947. That the C.G.R. has been much affected by the present high wages, increased as from January 1, 1946, and by the high cost of materials, is shown in the table below giving typical pre-war, depression, and war years results:—

Year	Working expenditure	Gross receipts (Rs. 000)	Net receipts
1928/9	25,997	32,499	6,502
1934/5	18,911	18,273	— 638
1938/9	20,021	15,441	— 4,580
1944/5	39,746	59,592	19,846
1948/9 (estimated)	70,000	55,000	—15,000

The use of Ceylon as a base of operations in S.E. Asia and the imposition of petrol restrictions put a heavy, if temporary, strain on the C.G.R. Little was done, if indeed it had been possible at the end of hostilities, to meet the coming fall in revenue. Proposals by the C.G.R. Management for a comprehensive increase in freight, parcels and passenger rates were rejected by the Government. The third class basic fare, which now forms the bulk of revenue, however, was raised recently from 2½ to 2¾ cents (0.42d.) per mile.

Mr. Rutnam reserves for the second volume his recommendations as to road and rail competition and the problem of freight rates, which are the crux of the matter. Given present conditions, Mr. Rutnam considers the C.G.R. to be efficiently worked, though he criticises discipline, and complacency in the outlook of the staff. He does not consider that any

heavy capital expenditure is justified, and in this agrees with the report of the (1936) Hammond Commission, which was opposed to electrification even of intensively worked suburban lines and recommended a cautious policy regarding dieselisation (the latter has since been steadily if slowly pursued). He urges an increase in the third class fare to 3 or 3½ cents (0.56d.) per mile, which he will do well to discuss in due course in conjunction with road competition. Apart from advocating some slight increases in running speeds, his recommendations are confined mainly to problems of organisation. The modified "divisional" organisation set up in 1925 appears to work smoothly, though there are defects. The division of responsibility should be ended between the Signal Engineer, for instance, who is responsible to the Chief Engineer of the C.G.R., and the Chief Telecommunication Engineer of the Postal Department, who, though working for the C.G.R., is responsible to another Government Department. Ordinary building work should be let out by the Way & Works Department to contractors. The Chief Commercial Superintendent's Branch should devote more attention to the problems of road competition and of ticketless travel. The C.G.R. Stores Branch should be made independent of the Government Stores. Mr. Rutnam makes two controversial recommendations: the restriction of the General Managership to Transportation as opposed to other specialist officers, and the reversion of disciplinary functions from the Chief Administrative Officer to departmental officers. He does not discuss the closing of the Kelani Valley (2 ft. 6 in. gauge) or of any other apparently hopelessly uneconomic sections of line, as was advocated in the Hammond Report. In the main, however, Mr. Rutnam agrees with the Hammond Committee, whose report even today makes topical and instructive reading. The Adam's Bridge scheme for a causeway and bridging to link the C.G.R. with the metre gauge section of the South Indian Railway appears to have been shelved. The C.G.R. is an economic and strategic necessity for Ceylon, and the problem is to maintain efficiency whilst minimising the cost to the taxpayer.

Whilst India as the result of the war gained sometimes considerable improvements to her ports of Bombay, Calcutta, Madras, and Vizagapatam, it is surprising that Colombo, the only considerable port of Ceylon, should still be without alongside berths. The war, however, afforded valuable experience, in the light of which a re-examination is being made of plans for improvement about to be put in hand in 1939. They include the provision of 14 alongside berths with mechanical equipment: five for general cargo, three for passenger traffic, and two each for oil bunkering, oil discharge, and phosphates and railway coal, the last on the assumption that the C.G.R. will be steam operated for the next 15 to 20 years. Mr. Rutnam advocates separation of the posts of Chairman, Colombo Port Commission, and Principal Collector of Customs, decasualisation of labour, increased welfare measures and freedom for shipowners to choose their stevedores, the last an important factor in a port so dependent on lighterage.

Passenger Traffic Behind the Iron Curtain

MANY Western Europeans are inclined to regard all countries behind the Iron Curtain as almost a federation, but for most practical purposes, including rail transport, they have remained individual units in accordance with their several traditions. There are, however, certain tendencies in passenger traffic which are common to them all, but with the U.S.S.R. railways remaining unique, as they have always been, partly by reason of gauge differences.

The most notable recent development is the breaking of the monopoly of Cie. Internationale des Wagons-Lits, and the operation of internal sleeping and restaurant-car services by some of the railway administrations concerned, with the Wagons-Lits Company working only international services running through to foreign countries.

Last May, the 1948 summer timetables inaugurated the Balt Orient Express, which was finally agreed at the International Timetable Conference at Istanbul in October, 1947. The Balt Orient service is basically between Stockholm and Oslo, on the one hand, via the Trelleborg-Odra train ferry, and Warsaw, Wrocław (late Breslau), Prague, Budapest, Bucharest, and Belgrade on the other. It incorporates no Wagons-Lits stock,

* "Transport Conditions in Ceylon." Volume I. Government Press, Ceylon. Price Rs. 2.50

except in so far as that company operates restaurant cars in trains in which through vehicles of the Balt Orient express are running. The through sleeping cars between Scandinavia and the Eastern capitals are provided by the Swedish State Railways, and other stock, first, second, and third class, and baggage cars, by the various administrations concerned in the usual way, that is, in accordance with R.I.C. The Balt Orient express is an entirely new departure in the history of European passenger services, and seems to have been inspired by the Polish railway authorities, who displayed great energy in constructing the train-ferry terminal at Odra (late Swinemünde, in Pomerania, and now in what is claimed as Polish territory).

The railways of Eastern Bloc countries seem to be no more successful than those of the West in the reduction of frontier formalities or in securing uniformity in changing the hour of summertime. They do not, indeed, seem to have the support of their Governments in developing land travel, which may not be surprising; a large proportion of international travellers in Eastern Europe consists of officials, for whom the aeroplane is the obvious means of transport, but roads, where they exist in Czechoslovakia, Hungary, and other parts of the former Austro-Hungarian Empire, are beginning to be regarded as potentially important for passenger transport.

"Iron Curtain" railways retain their national characteristics; all, and especially the Yugoslav and Polish State Railways, were damaged by the war, and all have set energetically about restoring and improving their inadequate passenger services, but mainly to cater for publics with modest requirements and low standards of living, and for strategic needs. It is noteworthy that the classes of travel remain unchanged, namely, second and third, with first class in certain express trains.

Plymouth Railway Centenary

THE centenary of the opening of the South Devon Railway to Plymouth (Millbay) on April 2, 1849, has been celebrated during the past week by an exhibition of more than 100 railway prints, photographs, maps, timetables, and models, held in the Museum & Art Gallery, Plymouth. The Exhibition was arranged by the Western and Southern Regions, British Railways, with the co-operation of the Plymouth Civic Authorities, and the opening ceremony was performed at 3 p.m. on March 31, by the Lord Mayor, Alderman H. J. Perry, supported by Sir Arthur Holleley, Chairman of the Art Gallery Committee, and Major M. J. M. Dewar, Publicity Officer, Western Region, British Railways.

The exhibition recalled the advance of the Great Western, and the London & South Western railways into the West of England, Brunel's broad gauge, atmospheric traction, and many of the notable engineering works on the railways of Devon and Cornwall. The South Devon Railway was authorised from Exeter to Plymouth on July 4, 1844, and was opened in sections between 1846 and 1849. A temporary terminus at Laira Green, on the eastern outskirts of Plymouth, was brought into use on May 5, 1848, but it was not until April 2, 1849, that the extension of 2½ miles to Millbay was completed. The South Devon Railway was absorbed by the G.W.R. in 1876.

The railway from Exeter to Plymouth was laid out by Brunel, on the assumption that it would be worked on the atmospheric system, patented by Clegg and Samuda, in 1839. To save the expense of a second atmospheric pipe, it was decided to lay only a single track, and the earthworks were reduced, west of Newton Abbot, by the adoption of far steeper gradients than had been intended. Such were the extravagant claims made for atmospheric traction that these alterations were not considered serious disadvantages. Even on the easily graded section from Exeter to Newton Abbot, the system proved a complete failure, and the experiment was abandoned after one year's trial. No attempt was ever made to extend it west of Newton Abbot. Included in the exhibition was a section of the original atmospheric pipe, and an early engraving illustrating the details of the apparatus. Other exhibits recalled the final abolition of the 7-ft. gauge in Devon and Cornwall, in May, 1892.

The London & South Western Railway reached Exeter in 1860, and by 1874 the railway had been extended round the north side of Dartmoor to Lydford, whence narrow-gauge rails were laid on the Launceston branch, and the main line,

of the South Devon Railway, to give the company access to Plymouth. On June 2, 1890, the L.S.W.R. obtained an independent route to Plymouth by the completion of the Plymouth, Devonport & South Western Junction Railway from Lydford to a junction with the G.W.R. west of North Road Station (opened in 1877). For several years the L.S.W.R. had the advantage of the shorter route from London to Plymouth by 15 miles, but the completion of the G.W.R. direct line to the West of England in 1906 made the distance from Paddington to North Road 225½ miles, as against 230½ miles from Waterloo.

Railway Companies Vindicated

(From a Correspondent)

AN excellent editorial on the "Transport Commission's Search for Revenue," in your April 1 issue! The Mansion House Association on Transport wouldn't find a grain of comfort in Sir Cyril Hurcomb's *non possumus* address, but it was balm of Gilead to the old generation of railwaymen who had to endure the abuse of irresponsible politicians like Mr. Hugh Dalton, talking at large about the inefficiency of the railways and promising cheap and better transport after nationalisation. The Ministry of Transport and the Commission it has set up now realise that the railways before the war did work which is at present beyond the compass of the State machinery to perform.

For one thing, the old railway companies would have completed their 1948 accounts a month ago. It is pathetic to hear the Chairman of the Commission talk about the gigantic task of preparing its first annual accounts. On February 4 you published preliminary estimates of the 1948 results of the U.S.A. railways. On March 24 the statement of 1948 revenues and expenses, circulated by the Association of American Railroads, was received from Washington, D.C., by ordinary mail. It showed a total operating revenue of \$9,671,576,000, only 0.4 per cent. above the estimate. That amount was more than 4½ times the Commission's traffic receipts for 52 weeks of last year, published in the December issue of *Transport Statistics*. The A.A.R. statement gives separate revenue and expenses figures for 122 railways, together with their net railway operating income. Monthly totals under these heads are shown for the past six years, as well as a comparison of the operating income account for the same period. The prompt issue of all this information appears to be regarded in America not as an accounting feat but as an ordinary business arrangement.

April 1 was an appropriate date for *The Times* to print Lord Inman's rambling remarks. The so called plans for improving railways meals and for extending the scope of catering simply fool the people. Half the report goes to justify existing restaurant-car charges and the price of 3d. for a cup of tea in refreshment rooms. Better meals are not likely to be served on trains, except at a higher charge. Luncheon boxes were reported to have been introduced, but are not a novelty. Trolleys in train corridors shouldn't be allowed by the traffic department!

A list is given of some 40 places where schemes for modernising refreshment rooms have either been approved or are being prepared. Spread over five Regions, that is not a large number, and the old companies would have had quite as extensive a programme in ordinary course. Before the war one or two cases of alterations or extensions came before the directors at almost every meeting.

Similarly the plans for reopening and altering hotels after the upset caused by the war are orthodox in the extreme. Are we going to hear nothing more about supplying cheap accommodation for the multitude? Won't the Pump Room Hotel, Bath, be a resort for the well-to-do?

In short, there is no progress to report from the setting up of a separate Executive, with a costly administrative staff, to manage an ancillary business which had a capital of about £10,000,000 in 1938, with gross receipts around £6,000,000 and an expenditure of £5,500,000 or so. And the new régime may do harm by neglecting traffic considerations, as for example by putting difficulties in the way of running restaurant cars for the public convenience, when receipts will not cover expenses.

R. B.

LETTERS TO THE EDITOR

(The Editor is not responsible for the opinions of correspondents)

A Railway Life-Line Across Africa

Uvongo Beach,

Natal, March 22

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—In my second article published in *The Railway Gazette* for February 4, I did not make it quite clear (although the map did so) that while, on completion of the Kamina-Kabalo link, passengers and goods will be able to travel by rail between Lobito Bay and Albertville, they will not be able to do so in the same vehicle until the Kabalo-Albertville line of 169 miles has been converted from metre to the 3-ft. 6-in. gauge.

No doubt the Cie. Chemin de fer des Grands Lacs (which operates the section) would be prepared to do this: possibly *pari passu* with a Tanganyika Railway conversion, or earlier in the interests of Congo-Angola traffic.

Yours faithfully,

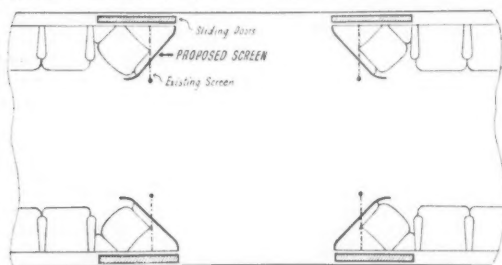
G. V. O. BULKELEY

Modified Draught Screens in Underground Cars

17, Springfield Road, Thornton Heath,
Surrey, March 17

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—We are all aware of our temptation as passengers to stand just inside the doors of the underground carriages when making a short journey. During rush hours this causes much congestion and delay. In my opinion, this trouble could be mitigated considerably by arranging the screen at either side



Proposed alteration to draught screen on underground coaches

of the door-openings at an angle of 45° and without hand-rails, or of smooth rounded section. The concentrated force of oncoming passengers would tend to "fan out," thus gently dislodging any "limpets" and unknowingly marshalling themselves "further down the car."

Orders or cajoling by the station staff do not appear to achieve much response, and the present placing of panels and hand-rails at right-angles either side of the doors forms a sort of vestibule and encourages passengers to remain there. The suggested arrangement would involve, of course, structural alterations which might not be possible on existing stock, but it would be worth trying as an experiment.

Yours faithfully,

S. F. SIBLEY

A Locomotive Runaway

Headquarters, Saurashtra Railway,
Bhavnagar Para, Saurashtra,
India, February 28

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—With reference to a letter dated January 12 from Mr. W. A. H. Watts, Deputy General Manager, West Region, Eastern Bengal Railway, Paksey, Pakistan, in connection with the above and published in your January 28 issue, I have to report an exactly similar occurrence on the Gaekwar's Baroda State Railways, some years back.

A narrow-gauge engine was hauling a mixed train on the single line and was at Badra—a station on the Jambusar-Goyagate (Baroda)—Dabhoi-Chhota Udaipur main line. The engine became separated from its tender through the snapping of the drawbar nut while engaged in yard shunting. Neither the driver nor the fireman was on the engine side and the engine ran away unattended. The parting occurred in the station yard.

The engine ran through two stations, Bhaili and Vishamitri,

and as it approached Goyagate (Baroda) it was still running when the Points-Jamadar boarded it while it was in motion, shut off steam, and stopped it without any damage either to the engine or to any other vehicle or track. Of course, the Points-Jamadar was rewarded for his presence of mind. Incidentally, Padra is 12 miles from Goyagate. Had the parting taken place on the running train, there would have been a serious accident as trains—both passenger and mixed trains run without vacuum brakes—run at a speed of 25 miles an hour and more. The track is practically level and the occurrence was purely accidental.

I am writing this as this occurrence would interest locomotive engineers. I cannot state at this moment the class of this engine, but I would mention that these engines take a load of 40 units of narrow-gauge vehicles with two brake-vans, trains running non-vacuum.

There is no control system on the G.B.S. Railways and the only communication available is the telegraph line worked on the Morse, and it must be said to the credit of the staff concerned that the lines were kept clear for the passage of the runaway and everyone was on the alert.

Yours faithfully,

N. S. DESAI
District Traffic Superintendent

Drivers, Past and Present

Locomotive Post,

25, King James Avenue,
Cuffley, Herts. March 23

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—The article "I Saw Three Englands" in the January-February and March-April, 1949, numbers of your contemporary *The Railway Magazine*, is particularly interesting. I note with interest what Mr. Roe thinks of some modern drivers, as compared to some of the past, and about both crowds I could write a lot, but let this be said of the modern driver, who now handles engines that his earlier representatives would have been scared stiff to take out of the shed: he has to perform his duties in an atmosphere of great discouragement. The common using of engines and their filthy condition has robbed the job of its character and achievement, and modern managements are paying for it in terms of excessive coal consumption. The consumption of coal by steam locomotives of today is definitely excessive, and I am satisfied that existing tonnages can be hauled at present rates of speed on not more than 40 lb. per mile, whereas they are said to be burning 61 lb. per mile (vide Mr. Alfred Barnes at Rugby).

Yours faithfully,

ALFRED OLIVER

Train Control in the Netherlands

9, Daleston Avenue, Linthorpe,

Middlesbrough, March 8

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—The article by Mr. A. M. MacDiarmid in your issue of February 25 has brought back to me memories of the splendid work of 952 Railway Operating Company when in Holland during the winter of 1944.

I should like to emphasise that the Railway Operating troops of 21st Army were given every possible assistance by all grades of the Netherlands railwaymen with whom they came into contact. Before the Liberation, large numbers of the Dutch railwaymen had performed persistently acts of sabotage by causing derailments, etc., and it was not easy for them to adapt themselves quickly to whole-hearted co-operation. The following translation of an instruction issued by the Chief Stationmaster at Roosendaal may be of interest to some of your readers, as an illustration of the co-operation of the Dutch railwaymen:—

TO ALL OPERATING PERSONNEL (INSPECTORS, LOCOMOTIVE CONTROLLERS, SIGNALMEN AND SHUNTERS)

It is necessary to issue the following instructions.

The circumstances under which we worked from May 10, 1940, until the day we were freed, were such that whether we were working for our families, our country, or our railways, it was always done under a threat.

It is understood that under these conditions, we did not give all our power, and did as little as possible. When a task had to be done, we often did not know whether it was in the interest of our country, our trade, or of our oppressors. Consequently, the work was often done with a lack of interest and thoroughness.

It followed that orders given to our inspectors and shunters in the yard were given under the threat of the enemy, and this resulted in passive resistance on our part and a feeling of hate. We lost the joy of working because we were not working for ourselves.

This has all changed now.

Many of us voiced our intention of bringing our full energy

and power to bear as soon as the enemy had withdrawn. Now the enemy has withdrawn.

We may still have to work under difficult conditions, but of another kind.

We now work under English supervision.

The co-operation at Roosendaal is good, but that is not enough—for we want to do the job ourselves, and do it well.

This we know we can do, and will come about if everybody gives all he has got.

Only when the English authorities can put their full trust in us will the job of doing the whole of the operating of the railways be put on our hands.

Therefore, in the future we must not carry on as we have done for the last four-and-a-half years. A new period has arisen when we must all increase our capacity to the utmost, and I rely on your complete co-operation.

Points regarding the safety of operating

The Netherlands Railways have always maintained a very fine record of safe running, of which we may well be proud. If we all remain conscious of this fine record, and encourage each other to this purpose, we will attain our desire.

The following incidents are alleged to have occurred during recent weeks:—

Accidents have occurred caused through negligence or ignorance. Points have been damaged, and clipped points run through causing derailments. These points when damaged cannot be replaced. It is therefore up to all of us to work accurately and so prevent these accidents.

The following points are to be remembered:—

Convince yourself that the points are set correctly before proceeding. Be careful to see that all necessary points are clamped. Only authorised personnel are allowed to set the points. If a point is set in an abnormal position, it must be reset as soon as possible. Points that are not interlocked with signals must be watched carefully. Watch carefully the setting of all point blades, and see that all wheels are clear before resetting.

The work of pilotman is not always carried out correctly. Anybody ordered to act as pilot must be conscious of his responsibility throughout the movements. The driver is dependent on the pilotman and relies on him.

Piloting means controlling every movement of the train, and constantly watching the safety of the running track over which the movement is being made.

This is only possible if the pilot is in a position to overlook the setting of the points, and stop the train in time if necessary.

It may be permitted for a pilot to ride on the engine by day, but at night this is absolutely forbidden, for the setting of the points cannot be seen from the engine. At night the pilot will walk along the track ahead of his train, advising the driver to take special care of his signals.

If a pilot feels unsafe to carry out his task, he will report this to the yardmaster and will not carry out his duties unless instructed by the yardmaster.

A certain amount of delay by piloting is unavoidable, but safety of the movement must at all times be of paramount importance, and must never be overlooked.

The overlooking of safety precautions is intolerable at all times.

I feel that everyone of us knows his duty.

It is clear that the responsibility rests on each of us to do all we can to ensure safe and efficient workings of the railways.

(signed) Chief Stationmaster,

G. J. KOOP

Yours faithfully,

W. UNDERWOOD

Regional Liveries and Architecture

1, Stadium Street,

Varosha, Famagusta,

Cyprus. March 28

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR.—In taking the public into its confidence in the matter of liveries for locomotives and rolling stock the Railway Executive has done the right thing, and in the new colours I believe the authorities have made a good choice. It now remains only to keep the engines and trains clean so that we can see what colours they are supposed to be.

The public will appreciate the practical difficulties of different colours for different Regions, but these difficulties do not apply to stations and other buildings.

May I make three suggestions here? They are:—

(i) that colours representing each Region be used on the station nameboards (e.g., Midland red for London Midland Region);

(ii) that woodwork and metalwork be painted in different colours according to Regions—with a new colour scheme for N.E. and Scottish Regions;

(iii) that a different style of architecture be adopted for new work in each Region (e.g., Scottish Baronial for Scotland, Flemish for Eastern Region, Classical for Midland, etc.) Or is this architectural heresy? All I ask for is a reminiscence, not an imitation. And, of course, the distinctive London Transport modernism for that system.

What one dreads is the London Transport style appearing in pleasant East Anglian market towns or in the Highlands!

Lastly, Sir, a question which I wonder nobody has asked before. Why London Midland? The East we know, the West, South and North-East we know, but where are the London Midlands? Even the York North-Eastern or the Edinburgh Scottish Region would be more logical than the London Midland. And why not the London Western, etc.? Either Midland in its simple dignity, or nothing.

I hope the Transport Commission or its Railway Executive will give its courteous attention to these suggestions of a native of the Midland Division of the Midland Region.

Yours faithfully,

[The Rev.] WILFRID T. F. CASTLE,
Assistant Chaplain in Cyprus

Time Wasting by the New Regime

London, N.W.3. March 28

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR.—Did you notice that on page 310 of your March 25 issue the number of words needed to describe Mr. A. N. Thorpe's office (Architect in the Department of the Civil Engineer of the North-Eastern Region) is 13? And "Railway Executive, British Railways" must be added to make his position in the world clear to all and sundry in proper official style.

The new regime wastes numbers as well as words. On page 339 every engine bears a five-figure number, an arrangement which must waste everybody's time in writing the numbers on forms and records and increase the chance of error. Some simpler system of identifying individual locomotives could surely have been devised.

Then on page 328 the London Midland Region writes about "a gross tare of 4 tons 12 cwt. per cradle" when they mean weight. No dictionary supports that use of a fine old word; both tare and tret are deductions, according to all the authorities, from the gross weight to arrive at the net weight.

Yours faithfully,

EAST ANGLIAN

Restaurant Car Meals

London, S.W.1. March 14

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR.—With a recollection of two very unsatisfactory lunches on London-Carlisle semi-fasts last autumn, of which I was reminded by the protest of the Rural Dean of Smethwick, against a very poor lunch in a London Midland Region restaurant car, as reported in the *Daily Mail* and reproduced in the "Scrap Heap" in your issue of March 11, I decided, when recently visiting a North Midland town served by both the Eastern and London Midland Regions, to try my luck with the former. I was pleasantly surprised to be served with an excellent lunch consisting of a good soup, an excellent cut of roast lamb with boiled and roast potatoes and cauliflower—all nicely cooked and served—followed by a choice of two sweets (both good) or cheese, biscuits and celery, with coffee as an "extra"; all this for the very reasonable charge of 4s. 4d. This lunch compared more than favourably with any I have had in the restaurant of the Liverpool Street Hotel (Eastern Region), where the corresponding charge is 5s. 6d.

I expressed my satisfaction with the lunch to the steward and asked whether the improvement as compared with my experiences of the previous autumn could be attributed to the Hotels Executive having got into its stride. He replied that he did not think so, and asked on which Region's cars I had been served with the poor lunches. On my replying "London Midland," he said he was not surprised, and his only reply to my suggestion, that as the restaurant car arrangements for all Regions were now controlled by the Hotels Executive there should be no material difference, was an enigmatic smile. I made the return journey by the London Midland route, but in the afternoon when only tea was being served, and, apart from the service being of the rough and ready variety, had no fault to find, and the fare provided was good value for the 1s. 6d. charge.

The experiences of others of your readers who have used the restaurant car services of the various Regions recently, might be of interest to your readers, including

Yours faithfully,

OCCASIONAL TRAVELLER

TRADERS' ROAD TRANSPORT ASSOCIATION.—Mr. Alfred Barnes, Minister of Transport, will be the principal guest at the annual dinner of the Traders' Road Transport Association, the national organisation for "C" licence-holders, to be held at Grosvenor House, Park Lane, London, W.1, on Tuesday, April 26.

The Scrap Heap

NATIONALISED RAILWAYS

In its recent memorandum dealing with rail transport, the Transport Operators' Association of Rhodesia says:—

"The South African Railways offer an excellent example of a Government transport monopoly which has degenerated into a political vote-catching machine, a Government taxing machine, and a major factor in the establishment of uneconomic enterprise in South Africa."

RAILWAY SUBSIDISED NATION

A correspondent, writing on the recent statement that our oldest nationalised industry, the Post Office, made an overall profit of about £20,000,000 last year, claims that transport nationalisers now have a chance to profit by the example of their Post Office colleagues and put the railways on their feet. Practically every letter, he says, makes some part of its journey by rail, and assuming that every letter-writer takes his pound of flesh and uses his right to 2 oz. for 2½d. from Lands End to John o'Groats, the charge made works out at 5s. a ton a mile. By applying the same rates to rail traffic, our correspondent estimates the annual revenue that would accrue to be about £3,500,000,000 from freight, and another £300,000,000 from passengers. This, he points out, is rather more than the total national Budget estimate.

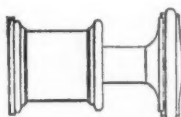
FALL OF THE TAY BRIDGE

Sir Ernest Barker, who was Professor of Political Science at Cambridge until 1939, has published a little book called "Father of the Man" which gives an account of his early years at Manchester Grammar School and Oxford. He was born in 1874, so that he was a little over five years old when the old Tay Bridge fell. He writes: "One memory I have which is curiously distinct. It is a memory of my uncle, who was a railway clerk at the local station . . . standing against the high mantelpiece of the cottage, on which a tin oil lamp was burning, and talking

about the Tay Bridge disaster. The story of the passengers swept to their death in the Tay has always lived in my mind." A correspondent who sends us the above adds:—"Oddly enough, the fall of the bridge is the first event I can distinctly remember. I can recall the bated breath with which people talked about the vanishing of the ill-fated train with all on board. Possibly, the fact that the storm was on a Sabbath night made the Scots of that generation regard the accident with redoubled awe."

100 YEARS AGO

From THE RAILWAY TIMES, April 7, 1849



NEW BUFFER

(Webster's Patent). Secured by Letters Patent for England, Scotland, Ireland, and the Colonies, also by various Letters Patent for Foreign Countries. Applicable to Engines, and all Vehicles travelling on Railways, as well as to Stations and Sidings. The Patentees invite the attention of Railway Authorities to the NEW BUFFER, which, for simplicity and economy, is unequalled. The price has been fixed very low, in the hope that thereby its use would become to railway stock an act of true economy. The invention is being worked successfully upon the London and North-Western Railway.

T. S. HARVEY, Agent.
Offices, No. 12, Pall Mall East, Trafalgar-square, London.

DEAD ON TIME?

This much, at least, used to be said in Mussolini's favour; that he made the Italian trains run to time. We cannot yet say the same of the Railway Executive, and there is a danger that after nearly ten years of war and austerity, a generation of officials and passengers may grow up which takes railway unpunctuality for granted. Fog and snow are two good reasons for late running, and there are others. There are too many occasions, when there is neither fog nor snow, on which British Railways fall short of the traditional high standard. If the executive cannot put the matter right—there are many difficulties, and few envy the members their jobs—it would be sensible and honest to amend the timetables. A very late train—say, three or four hours late on a two hours

journey—may be reported, on a quiet night, in a newspaper. But the less spectacular but equally annoying half-hours lost in a two hours' journey pass easily unrecorded. It would be a public service if in the next six months regular travellers would keep records of punctuality and weather conditions. It would then be possible to compare the reliability of different routes and to find out why some are so topsy-turvy. (Often the taxi-driver in the station yard or the porter is found working to a quite different and more accurate schedule than the timetable.) It is taking time to get back to the best pre-war standards of passenger transport. That is inevitable. The danger is that, unless travellers co-operate in their own interests, the good sections of the railway system pass unpraised and the bad ones grow worse. This has always been a danger in the public services. On the railways it could become disastrous.—From "The Manchester Guardian."

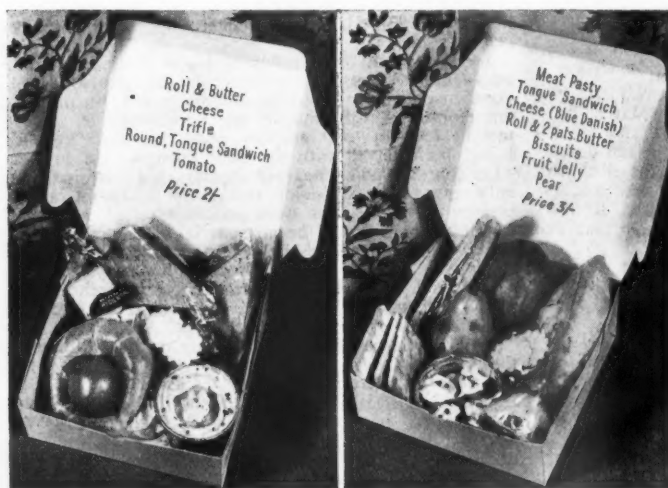
ANOTHER INJUSTICE

(A tilt at Major Pope's new colour scheme for locomotives)

Ah! Comrades all I've lately heard
A most depressing sound,
This poor old Railway N.C.C.
For Hades it is bound,
To the most distressed condition
In which it's ever been,
Now the "Pope" has started painting
All the locomotives Green.
I heard it first from Hunter's self,
A driver, cool, and fast,
He came down to the shed one morn
And frozen, stood aghast
At the spectacle before him,
Such a sight he'd never seen,
As an Ulster Locomotive
In a coat of shining Green.
And gallant Hughie Hamill
Had more dreadful news to tell,
'Twas not alone the Locos
But the coaching stock as well.
For the carriages he left last e'en
In sombre brown and black,
Clad in a coat of dazzling green,
Now stood upon the track.
Then burly Bill McNeilly,
With a fire in his eye,
Said he wondered how they'd manage
When it came to Twelfth July,
And declared he spoke for others
When he said he wasn't keen
To be driving Orange specials
With their Locos painted Green.
A group of shunters queried,
Does the Major understand
That the proper Crest of Ulster
Is the great O'Neill's red hand.
And if he hasn't learnt it,
Well, it's time that he should know,
And called a vote for volunteers
To go and tell him so.
Then up spake Georgie Pollock,
Just you have a care my sons
For our Pope (the gallant Major)
Is right handy with the guns.
But Guard O'Neill said stormily,
He never yet had seen
Any man on earth who'd wallop
Both the Orange and the Green.
And so these angry Railwaymen
Debated loud and long,
And in the end decided on a resolution
strong,
That be the consequence what may,
This one thing they would do—
They'd send the Pope back to Bombay
And paint the darned lot Blue.

—From the "Carrickfergus Advertiser & East Antrim Gazette."

Luncheon and Dinner Boxes for Trains



The luncheon and dinner boxes now being introduced on British Railways by the Hotels Executive (see page 371)

OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

SOUTH AFRICA

Suburban Passenger Traffic

The growth of suburban passenger traffic, which has been a feature of recent years, has been well maintained and is likely to increase still further with the development of extra-urban areas and native townships. Suburban trains are crowded during peak hours at all the large centres, but additional trains are being introduced as new stock becomes available. At the end of 1947-48, nearly 500 new suburban vehicles were on order.

Passengers made 50,696,742 journeys on Johannesburg suburban services during the first six months of the financial year April—September, 1948. If the 3,121,058 journeys on the Pretoria suburban system are added, the total becomes 53,817,800. The corresponding total for the next most important suburban system, the Cape Peninsula, was 39,627,274, followed by Durban with 10,622,878. The upward tendency in suburban passenger traffic was maintained on all systems with the exception of Pietermaritzburg and Durban. Johannesburg increased by 4,011,000; Capetown by 880,000; Pretoria by nearly 200,000, and Port Elizabeth by 150,000. The grand total of suburban journeys for the Union was 110,658,123 for the six months; other traffic accounted for 14,370,517 journeys, making a grand total of 125,028,640 as compared with 119,961,169 in the corresponding period of the previous year.

Fruit Exports

During the year 1947-48, 187,992 tons of citrus fruit were exported, an increase of 50,553 tons compared with 1946-47. This increase can be attributed mainly to the availability of more refrigerated shipping to convey the fruit to Great Britain.

A total of 84,759 tons of deciduous fruit was shipped during 1947-48, an increase of 48,694 tons on the amount shipped during the previous year; this brought the quantity exported up to almost pre-war level. Most of the fruit exported went to the United Kingdom.

In the year 1947-48 a total of 271,673 harbour tons of fruit was dealt with in the Administration's pre-cooling stores. The building of the existing pre-cooling stores at the principal Union harbours represents a capital investment of £817,806, and the accumulated loss on their working at the close of the financial year amounted to £433,801.

Luxury Bus built by Railways

The first luxury road motorbus to be built by the South African Railways is soon to be placed in service. It will operate on tourist routes in the environs of Knysna where there is some of the most impressive scenery of the Cape. For many years the railways have been constructing bus bodies on chassis imported from overseas, and for some time between 200 and 250 all-metal bodies have been built every year in the workshops of the road motor services department. The use of steel for bodies has been found to have many advantages.

The new bus has been designed specially for sightseeing tours, and one of its features is a double plastic glass roof which gives excellent overhead vision in mountainous and forest country. Its original design has saved much weight and has reduced to a minimum the parts

which have to be imported. The bus is powered by two engines giving a total of 200 h.p., and a maximum speed of nearly 70 m.p.h. It has twin rear axles, each driven independently by one engine. This arrangement ensures smooth performance and allows the bus to be operated on one engine only.

Seating for 25 passengers is provided and the seats are of a comfortable, reclining type. Ashtrays are fitted to the armrests of each seat. Ventilators are installed in the roof. The vehicle is fully dust-proof throughout, and is lit by electricity. It is 30 ft. long and 8 ft. wide.

RHODESIA

Results

The total receipts for all sections of the Rhodesia Railways system (including the Beira and Shabani railways) for December, 1948, were £823,065. Expenses amounted to £641,496, leaving a net operating revenue of £181,569. For the nine months ended December 31, the receipts were £7,586,519, less expenses £5,640,152. The receipts were £1,178,336 higher than for the corresponding period in 1947, but expenses were greater by £747,664, giving a net operating revenue of £1,946,367 which was £430,672 more than for the comparative months of the preceding year.

SWITZERLAND

New Rolling Stock

Credits totalling fr. 32,850,000 (approximately £1,893,400) were approved recently by the board of administration of the Federal Railways for the acquisition of 100 passenger carriages, 25 luggage vans and 100 goods wagons, subdivided as follows: fr. 24,950,000 for ten composite first and second class coaches, 30 second class, and 60 third class coaches; fr. 4,500,000 for 25 luggage vans, and fr. 3,400,000 for 100 K3-type covered goods wagons. The total amount is fr. 550,000

below the total of fr. 33,400,00 envisaged by the building programme for 1949.

The new stock is intended partly to augment the existing stock and partly to replace stock due to be condemned. Of the latter a number is over age and was among the stock taken over from the former privately-owned companies at the formation of the Federal Railways.

The expansion of the existing passenger stock is considered as urgent and overdue. In 1948, the number of passengers conveyed totalled approximately 207 millions, and the number of coaches and the seating accommodation regressed by about 2 per cent. Passenger traffic in 1948 increased by 83 per cent. on 1938, when 113,000,000 passengers were conveyed. The goods traffic, totalling some 18,400,000 tonnes, in 1948 was about 33 per cent. above the total of 13,800,000 tonnes in 1938, and the goods rolling stock increased by about 2,000 units.

FRANCE

Railcars between Annemasse and Geneva

Connections between south-eastern France and Switzerland were considerably improved when diesel railcars were placed in service between Annemasse and Geneva Eaux-Vives on March 3. Annemasse, close to the border and 3.7 miles from Geneva Eaux-Vives, is an important junction whence four lines radiate; the main line Annemasse—Aix-les-Bains (joining at Aix-les-Bains the Lyons—Turin main line); Annemasse—Thonon-les-Bains; Annemasse—Bellegarde (joining the Lyons—Geneva Cornavin main line), and Annemasse—Chamonix. The double-track Annemasse—Geneva line is owned and worked by the French National Railways which owns also the Eaux-Vives Station. In a speech delivered at the inauguration of the new service, Monsieur Poncet, the General Manager of the South-Eastern Region of the French National Railways, announced that plans were being studied for the electrification of a number of lines in the mountainous region south of Geneva including the Annemasse—Eaux-Vives branch.

The Highest Station in the Colonies



Beyer-Garratt locomotive entering Timboroa, East African Railways. This station, 9,001 ft. above sea level, is the highest on a British Colonial railway

Locomotive Cylinder Design—1

Design of the cylinder unit seen from several points of view, with certain of the details that make the complete component

By George W. McArd, A.M.I.Mech.E.

THE two main features on every locomotive which call for the utmost consideration, while still in the design stage, are the steam producer, and its ability to supply quickly a generous amount of steam at a minimum cost, and the power unit, the main function of which is to utilise the steam available in the most efficient manner.

In the design of the cylinder unit, the first point to be decided is its location on the locomotive—inside or outside the frame structure—and, curiously enough, the position occupied today on new stock is exactly that chosen by the pioneers in

"nose" about the track, and this is attributed to the closer proximity of the two drives, in plan, to the longitudinal centre of the engine.

On the other hand, a serious weakness was introduced in the crank-axle unit that became a necessity with the inside-cylinder drive, and this fact influenced the return in recent years to the outside cylinder type, thus reserving the inside-cylinder position mainly for multi-cylinder units.

A further advantage arises when the outside cylinder has the steamchest outside also, and the entire valve gear is situated in an open position outside the wheels

valve gear attracted attention, however, designers produced the outside unit complete—cylinder and steamchest—and the results yielded particularly successful rivals of the inside-cylinder engine.

A good example of British inside-cylinder design is shown in Fig. 1; this is for one of Mr. S. D. Holden's 4-6-0 express passenger engines built in 1912 for the Great Eastern Railway. The straight ports, piston valves and unified casting are but a few good points in a really attractive design. So far as the outside cylinder is concerned, that shown in Fig. 2 is a unit fitted to some engines built by Robert Stephenson & Hawthorns Limited, Darlington, for the ex-Buenos Ayres & Pacific Railway, and here also attention has been paid to detail in the design, as, for example, the isolation of the passages for live and exhaust steam, large-diameter piston-valves and

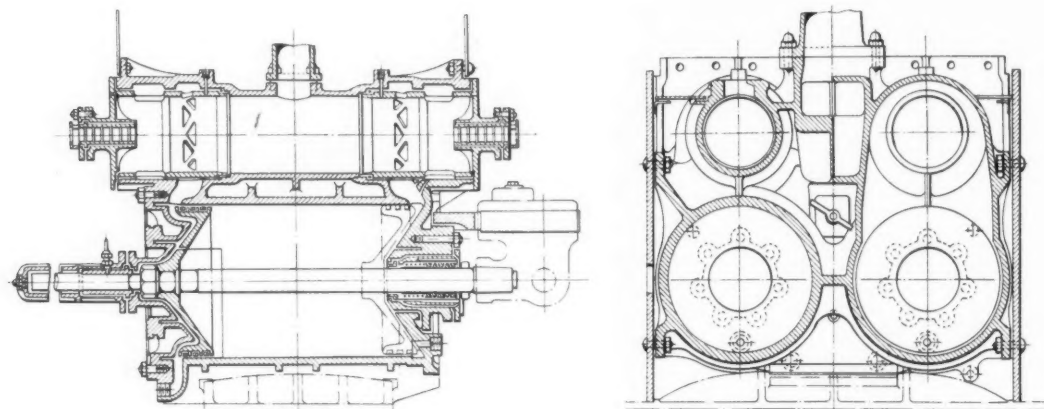


Fig. 1—Inside cylinder (piston valve type), Great Eastern Railway

design, namely, outside the frames. In early engines, cylinders were placed outside, to operate directly on the wheels, but with the passage of time, British engineers came to favour the inside location for compactness and thermal advantages, due to their situation under the smokebox. A mechanical advantage also was reaped in the reduced tendency for the locomotive to

and frames, and therefore is easily accessible for examination and attention. When the outside cylinder was re-introduced on British railways early in the present century, the Stephenson valve gear, with its inside eccentrics, was chiefly used; consequently, the outside cylinder with an inside steamchest was a natural development. As the merits of the Walschaerts

direct steam-passages. With all piston-valve cylinders, the desirability of providing the most direct ports cannot be overstressed, and although this will involve a lengthened piston valve and steamchest, when inside steam admission is used, the advantages are beyond question.

Where right and left hand outside cylinders are cast from a common pat-

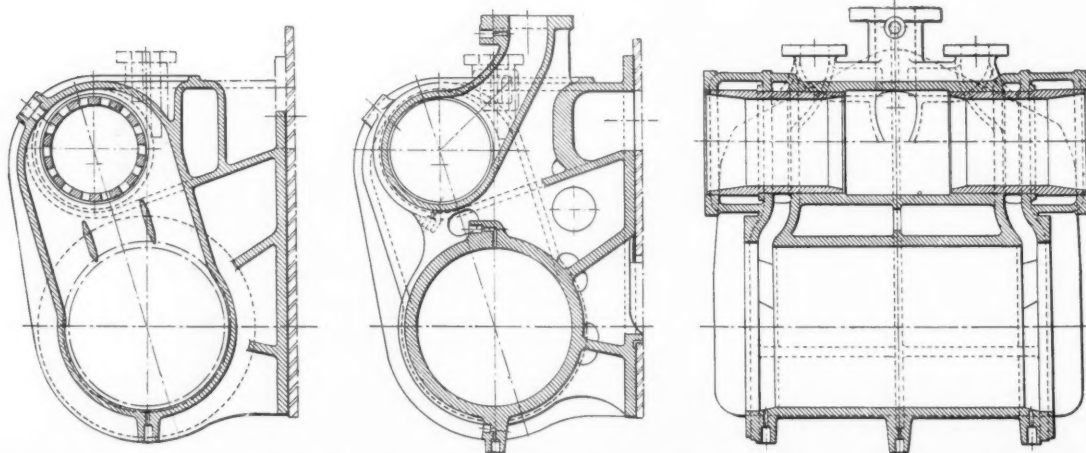


Fig. 2—Outside cylinder, Buenos Ayres & Pacific Railway

tern, the removable rear cylinder cover, designed for mounting on the same size facing as the front cover, has eliminated the blind end of cylinder barrel so commonly found in earlier types, and the bore of the cylinder is now carried through from end to end with bellmouthing, common in dimensions, adjacent to each cover. The bellmouth, extending a short distance into the barrel at each end, is usually $\frac{1}{2}$ in. to $\frac{1}{4}$ in. larger in dia. and has at least two good features to its credit, namely, the elimination of any risk of a shoulder forming, with subsequently fractured piston rings, and the creation of a recess to receive grit, or other small foreign matter that might otherwise damage the cylinder bore, or cause a serious foul.

To effect a good design of inside cylinder above 19 in. dia. for the British rail gauge has intrigued many locomotive engineers, and although units of 19 in. dia. have been made, this would appear to be the limit in size. The inside cylinder was fitted with flat slide-valves before superheated steam claimed the field for all but shunting engines, and the steamchest was almost invariably situated between the cylinder barrels.

When piston valves were adopted for superheated engines, one might have expected the removal of the steamchest from its central position would allow of an appreciable increase in cylinder bore, but other factors militated against such a change, as, for example, the necessity of placing two sets of valve gear between the cylinder driving-mechanism and slidebars; the difficulty of arranging suitable facings for cylinder covers, and the crank axle design requisite for the larger cylinders. This last factor is possibly one of the most serious, as the increased loads demand larger surfaces, which the limited frame width makes it extremely difficult to obtain. The inside cylinder with piston valves is appreciably heavier than the unit for slide valves, due to the necessity for separate steamchests, and, although a single chest and valve have been used in rare cases, for the two R.H. or L.H. cylinders, on four cylinder engines with adjacent cranks on opposite centres, this is not possible for two cylinder engines with cranks at 90 deg. pitch.

A number of formulae necessarily are included, and as a means of reference the following is a list of symbols used:—

- A — Area of steam or exhaust port (sq. in.)
 D — Cylinder dia. (in.)
 D₁ — " " at counterbore (in.)
 D₂ — Pitch circle dia. for cylinder cover studs (in.)
 L — Length of piston stroke (in.)
 N — Number of revs. of driving wheels per min.
 P — Boiler steam pressure (lb. per sq. in.)
 P₁ — Total steam load on piston at any given time (tons)
 R — Coupled wheel radius (in.)
 S — Piston speed (ft. per min.)
 V — Steam velocity (live or exhaust) in ft. per min.
 d — dia. of cylinder cover stud (in.)
 d₁ — " " at root of thread (in.)
 f_t — Safe tensional stress " for cylinder cover studs take 5,000 lb./sq. in. for cylinder metal take 4,000 lb./sq. in.
 n — Number of studs in pitch circle (cylinder covers)
 p — Cylinder studs circumferential pitch on P.C.D. (in.)
 r — Crank radius (in.) = 0.5L
 t — Thickness of cylinder barrel (in.)
 t₁ — Thickness of cylinder cover flange (in $\frac{1}{2}$ of an in.)

The thickness of locomotive cylinders in the barrel usually is not determined by calculation for strength, as would be done for hydraulic cylinders, or presses which are subject to high internal pressures. A rule which gives good average results is:

$$t = DP/2f_t + 1 \text{ in.} \quad (1)$$

$$= (DP/8000) + 1 \text{ in.} \quad (1)$$

where f_t is taken at 4,000 lb. but for smaller cylinders (below 16 in. dia.) the thickness obtained is rather high and the formula should be modified to:—

$$t = (DP/4000) + 0.25 \text{ in.} \quad (2)$$

Although results by either formulae are larger than is necessary in the first instance, it must not be overlooked that these components will be rebored, possibly more than once, before ultimate replacement, and the cylinder, therefore, must be capable of functioning satisfactorily after the last rebores.

A good feature adopted a number of years ago for piston-valve cylinders is the provision of "sight" holes to facilitate valve-setting operations. Two bosses—one for each valve head—are cast on the steamchest barrel about 30 deg. above the valve centre line, and, of course, on the outer surface. Plugs, with parallel screw threads and copper joint washers, are fitted, and these, being easily removable, afford a sight hole, through which the relation of port and valve edges easily can be checked when the gear is in a known location.

Cylinder Covers

The cylinder covers usually are from $\frac{1}{2}$ in. to $\frac{1}{4}$ in. in thickness in the centre, according to the bore of the cylinder, and the outer flange of the cover will be equal approximately to the cylinder barrel thickness. Early locomotive designers held the view that the cylinder-cover strength should be inferior to that of the cylinder itself, so that the former should break, rather than the more expensive cylinder casting, in the event of a broken connecting rod, or the accumulation of water in the cylinder. Cylinder end flanges may have a thickness equal to 1.25t, and the steamchest walls will be equal to 0.75t.

Liners

Cylinder liners are fitted only rarely in Great Britain, so far as new locomotives are concerned, but may be provided for engines which have seen considerable service, and the cylinder, through rebor-ing, has become too thin for further use unless lined. Cases also are on record where cylinder castings, after considerable expenditure on machining, have failed on test through defects in the bore, and the procedure acceptable to save the casting has been to enlarge the bore and fit a liner.

A definite advantage accrues where cylinders are lined at the outset, in that the cylinder casting will function practically for the life of the engine itself, the liner only being renewed as found necessary. The American Locomotive Company recommends these to be fitted by shrinkage and suggests heating the cylinders to 700° F. after finish boring; the liner to be turned 0.005 in. larger in dia. than the cylinder bore, with a permissible variation of plus or minus 0.001 in. No liner is to be less than $\frac{1}{2}$ in. thick for cylinders 20 in. bore and over, and all the liners must be the same length as the cylinder barrel, so that the ends may form the grinding joint for the cylinder covers.

Great care must be taken to ensure that the steam joint is made on the end of the liner, the cylinder bore in the main casting thus being effectively sealed against the possibility of steam leakage and subsequent corrosion. Plugs for securing the liner and cylinder may be fitted if desired,

and the material for liner and plugs should be the same grade of cast iron as that used for the cylinder casting.

Cover Studs

All covers, cylinder and steam chest, are secured by studs to the main casting, and the following formulae determine the number and size required:—

$$\text{Total load on studs} = \pi D_1^2 P/4$$

$$\text{Strength of studs to resist} = \pi d_1^2 n f_t/4$$

$$\text{Number of studs required} = n = 4\pi D_1^2 P/4\pi d_1^2 f_t$$

$$= D_1^2 P/d_1^2 f_t$$

and where f_t is taken at 5,000 lb. per sq. in.

$$n = D_1^2 P/5000d_1^2 \quad (3)$$

$$\text{and } d_1 = \sqrt{D_1^2 P/5000n} \quad (4)$$

From this value of d_1 , the dia. of the stud at the top of the thread (d) is easily obtained as Whitworth standard screw threads only are used for this detail.

An alternative method of ascertaining the requisite number of studs is as follows. First determine the pitch circle dia. (D_2) for the joint:—

$$D_2 = D_1 + 3d + \frac{1}{4} \text{ in.} \quad (5)$$

and to enable preliminary calculations to be made, assume one of the following stud sizes (d) for the case under consideration:—

10 in. dia. cylinders	...	...	$\frac{3}{4}$ in. dia.
14 in. " "	...	...	1 in. " "
18 in. " "	...	...	1 in. " "
22 in. " "	...	...	1 in. " "

The circumferential pitch of the studs may be taken as $p = \sqrt{100L_1 P} \quad (6)$

The number of studs required will then equal $\pi D_2/p$, and the external dia. of the facing for the covers should equal $D_2 + 3d + \frac{1}{4} \text{ in.} \quad (7)$

Although cylinder covers do not call for special attention normally in the matter of design, always bearing in mind that clearance spaces must be carefully watched, in rare cases the profile of the hind cover takes an extremely inset form. This may be necessary to increase the ratio of connecting rod to crank, and as shown in Fig. 3, on large units, as much as 3 or 4 in. can be added to the connecting rod centres.

An important point to be remembered by the one responsible for the detail design of the structure around the cylinders, is the provision necessary for removing any of the cylinder or steamchest covers, as well as the pistons (with rods) and the valves (with spindles). Although this may seem an unnecessary instruction, more than one instance exists where platforms and running angles have been riveted up before the discovery was made that the vital parts could not be erected.

Cylinder Clearances

When designing cylinder covers, the question invariably arises as to the correct clearance value to allow for the cylinder design. The term "clearance" includes the space in the cylinder between the piston head and the adjacent cylinder cover, plus the steam passage from the barrel to the port face in the steamchest, and is taken as a percentage of the cylinder volume, or more correctly, the piston displacement, that is piston-area times stroke-length. A desirable figure for saturated-steam simple engines would seem to be approximately 8 per cent., increased to 9 per cent. for simple engines using superheated steam; for compound engines, values suggested by Mr. E. M. Gass (see *Journal of the Institution of Locomotive Engineers* No. 78, page 13) are 16 per cent. for the H.P. cylinder and 8 per cent. for the L.P.

In cylinders of 18 in. to 20 in. dia., a

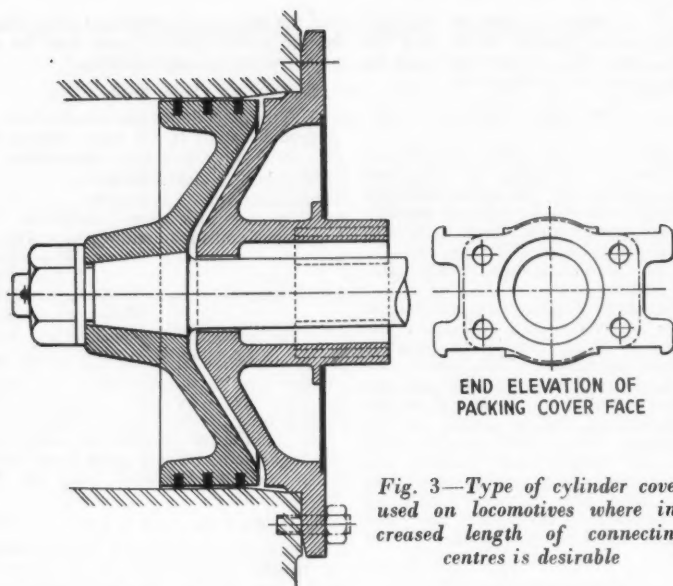


Fig. 3—Type of cylinder cover used on locomotives where increased length of connecting centres is desirable

common dimension for the width (or thickness) of the clearance space between piston and cylinder cover is $\frac{1}{8}$ in.; this should never be less, and in some cases, $\frac{1}{16}$ in. might be found a safer figure to use, providing short steam passages are obtainable. A design in which the writer collaborated some years ago had an inclination of 1 in 11 for the inside cylinder, and with a rise of 2 in. for the axle in the guides, $\frac{1}{8}$ in. of the clearance at one end of the cylinder was quickly absorbed, with the possibility of a like reduction at the opposite end, if the spring reaction carried the axle movement a similar amount in the reverse direction. This reduction of clearance is still further increased when adjustment of the connecting rod brasses occurs, as the design of rod generally used increases the distance between centres unless shims are fitted.

Tail Rods

Twenty years ago, much discussion took place in locomotive engineering circles as to the merits of extended piston-rods, or tail rods, as these were called by some, and as usual, opinion was divided. In theory, the tail rod is quite a desirable feature, as it helps to support what otherwise would be an overhung piston, and to eliminate the heavy wear that occurs in the lower periphery of the cylinder bore, the piston rod and its packings, always assuming that the tail rod supporting medium—bush or external crosshead and guides—is maintained at its correct height. Some engineers have gone to the extreme of fitting the tail rod with a special crosshead having its own slides and guidebars, but the disadvantages of any design are not inconsiderable, and comprise:—

- (1) Overheating of tail rod if correct adjustment is not maintained.
- (2) An extra stuffing box usually necessary in the front cylinder cover.
- (3) Increased weight of reciprocating masses and balance.
- (4) Additional lubrication points involved.

Tail rods, in spite of their theoretical advantages, have almost entirely disappeared from modern locomotive design, and the trend appears to be rather towards reducing the weight of the overhanging piston; where large heads must be used, as, for instance, the low pressure piston of

2-cylinder compound locomotives, an increased bearing surface is sometimes provided (as shown by Fig. 4) at the bottom of the piston, to reduce the unit loading on the cylinder surface. In a few instances a small spring-supported pad, or cushion, is used in the piston head, and this relieves the load on the rod packing to an appreciable extent.

Where greater wear than normal is anticipated in the cylinder, the fitting of a renewable liner, as described earlier, is a wise policy.

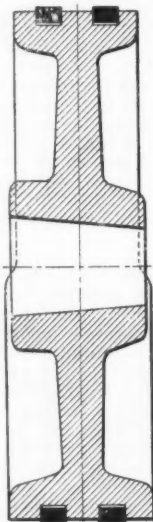


Fig. 4—Typical design of large diameter piston head with increased area on bottom half of periphery

determined by the experience or preference of the C.M.E., or his principals' consulting engineers. Sometimes the space between the cylinder and its sheeting has no material insulation, the air space being regarded as ample provision.

Cylinder covers on first class engines usually are encased by pressed sheet-steel casings, which further enhance the general appearance of the engine, and when these are polished, the claim is made that condensation losses, stated by Pettigrew as being normally in the region of 16 per

cent. as a total for outside cylinders, are still further reduced. Occasionally, planished steel sheets are used for the cylinder covering, and although more costly in the first instance, the extra cost is ultimately recovered several times over by the elimination of painting charges.

On first class stock, where the cylinders may be insulated by asbestos mattresses, provision also is made for the cylinder cover recess to be tightly packed with asbestos wool, this being held in position by thin sheet-steel discs—usually in halves on the hind cover—secured by screws.

Piston and Valve Rod Packing

Wherever a piston rod or valve spindle passes through a cylinder or steamchest cover, special steps must be taken to seal the opening against steam leakage, and, therefore, increased loss of overall thermal efficiency.

In the earlier locomotives this was effected by the provision of an ordinary stuffing box with gland and neck ring, the space between the last items being tightly packed with hemp steeped in grease and compressed on the rod by the usual two or four studs and nuts. As steam leakage could not for long be prevented by this means, mechanical packings were developed with a view to obtaining an automatic and self-aligning packing.

The two packings most frequently fitted are the United Kingdom and the United States packings; in each of these, white metal rings, bearing on the piston rod, are kept up to their job by the action of helical springs, and as wear takes place, the necessary adjustment is taken up by the springs.

Another form of packing which has found much favour in recent years is the Britemp, in which high-grade cast-iron rings displace the white metal, the former being considered in many quarters to be more efficient, to give longer service and to cost less. Incidentally, the claim is made that if a suitable grade of iron is selected, the rings will stand up equally well to superheated or saturated steam, developing such highly polished surfaces on rings and rod that an appreciable reduction in frictional losses is the result.

So far as the valve spindle is concerned, packings are necessary for the steamchest in which the flat slide-valve operates, as well as that wherein a piston valve with outside admission is used. Modern practice on piston-valve units, however, tends more towards the inside admission type of piston valve, that is, where the live steam is confined to the space between the valve heads, the spaces outside reserved for the outward flow of exhaust steam.

Under these conditions no packing, or very little, is necessary, and the method usually adopted is to provide long bushes—to take the wear caused by the sliding spindle—with numerous water grooves machined therein, plus a small stuffing box for one or two coils of grease-saturated hemp packing compressed by the orthodox type of glands and studs. This has been proved to give a long life between renewals and to maintain steam tightness in an efficient manner.

At the front end of the cylinder, the piston valve spindle works in a bushed cover, but this is cast with a domed hollow end casing of a suitable length to carry the supporting bush and permit the spindle the requisite movement demanded during full valve-travel operation. This hollow chamber is connected with the exhaust end of the steamchest by a groove large enough in cross section to prevent the spindle functioning as a compressor.

(To be continued)

Power Signalling on the B.B. & C.I.R.

Developments in colour-light and power signalling on the Bombay suburban section; panel interlocking contemplated for certain installations in future works programmes

By H. C. Towers,
Deputy Chief Engineer (Signals), B.B. & C.I.R.



Power frame in Bandra signal box, Bombay

IN *The Railway Gazette* of September 24, 1948, a general description of the Bombay, Baroda, and Central India Railway system was given. This line possesses the largest colour-light and power signalling installation in India and a more detailed description of this work and recent developments may be of interest.

Power for the operation of the local service is obtained at 22,000 volts from Tata's hydro-electric scheme. Sub-stations exist at Grant Road, Bandra, Kandivlee, and Bassein Road, the last being of recent design and using Hewitt glass bowl rectifiers. Because of trespass on the tracks the overhead system of current collection is used and power is fed to the contact wires at 1,200 volts d.c. The up and down local lines are electrified from Churchgate to Virar and also the up and

down fast between Bandra and Grant Road, on which non-stop electric trains run during the peak hours at speeds varying between 40 to 60 m.p.h.

Colour-light signals were first installed at Marine Lines and Charni Road, on the Churchgate-Grant Road Section, and opened to traffic in August, 1928. They were originally brought into use as 2-aspect signals and were controlled from miniature lever frames in the station offices at these stations. The 2-aspect signalling between Churchgate and Grant Road was converted into 3-aspect in March, 1934, the stationmaster's slide control frames being removed and the signals converted to full automatic working.

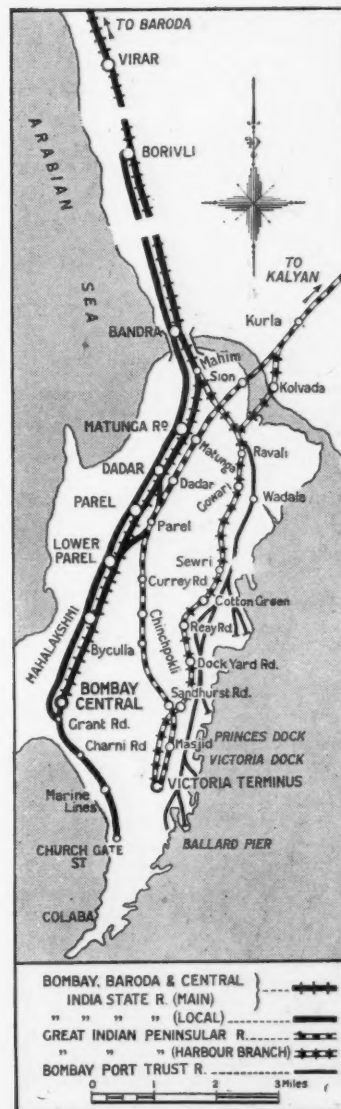
Churchgate is the city terminus of the local section and is situated in the business and shopping area, immediately

opposite the railway's general offices. It has two bay roads and three platforms with a large circulating area. Scissor crossovers are provided for train reversals and there is a long siding situated between the up and down lines, access to which is obtained by four crossovers, two at the station end and two at the north end, close to Marine Lines Station, which is the next to Churchgate.

Method of Working

The interlocking is operated from a power box containing a 23-lever all-electric frame. The signals are 2-aspect and 3-aspect and the points are worked by 110-V. electric point machines. Solenoid type disc signals are used for subsidiary movements.

Bandra, an important station 10 miles from Churchgate, was originally provided with mechanical semaphore signalling. In May, 1935, 20 colour-light signals, 25 electric disc shunt signals and 28 electrically operated points were brought into use, controlled from a 101-lever all-electric



Railways in the vicinity of Bombay



Borivli "A" box showing relay room and inner home signals

frame housed in a concrete signal box of modern design.

Terminal facilities are provided at Bandra, which has six reversing sidings for the use of B.B. & C.I.R. electric trains reversing to Churchgate, during the peak hours, and the G.I.P.R. electric train service between Bandra and Victoria Terminus *via* that railway's harbour branch. There are five tracks and five platforms. The introduction of this power box displaced 84 mechanical signals and three mechanical boxes. In 1938, advantage was taken of spare levers in the frame to close Khar Road box, situated about 1½ miles north of Bandra Station, and operate the signals from Bandra. All these signals have been provided with telephones.

Disc Signals for Shunting

As far as is known, the Bandra installation was the first in India to make use of the electric solenoid type disc signal for shunt movements. The distinctive indication given by this signal makes it eminently suitable for shunt movements and it cannot be confused with signals controlling running movements. To promote uniformity, all mechanical shunt signals have been converted to discs instead of miniature arms.

Mahim, the junction between the B.B. & C.I.R. and the G.I.P.R. Harbour Branch, has a 50-lever power box opened to traffic in October, 1935. Similar in every way to Bandra, it controls the junction with the harbour branch and the



Mahim signal box, B.B. & C.I.R.

parallel junction between the local and fast lines.

The completion of the programme of colour-light signalling between Parel Junction and Mahim was effected on February 27, 1937, when Dadar through lines box was converted to colour-light signalling. On this section there are eight fully automatic signals, from Elphinstone Road to Matunga. Parel Junction is operated from an 11-lever miniature frame situated in the stationmaster's office, the points being operated by electric machines. A "king lever" is installed for automatic working, and when this is reversed, a stationmaster's key can be extracted, which locks all the levers controlling the main-line running signals in the reversed position. The signals then work automatically through the agency of the track circuits and are distinguished as automatic by an illuminated "A" sign.

Miniature control frames are also used at Elphinstone Road Local and Matunga level crossings. Elphinstone Road was necessary in connection with a trailing connection between the locomotive shops and the down local. A 5-lever miniature frame controls this layout and normally the down local signals work automatically through a "king lever." The gate control frame at Matunga controls all signals on the local and fast lines which are interlocked, through the control, with the level crossing gates. This interlocking is operated with great success by the gatemen themselves.

At Dadar advantage was taken of the facilities afforded by power working to close the north box and operate the connections to the goods yard by power from the south box (now known as Dadar box). Shunting is facilitated by a telephone to the outlying points. A purely automatic signal is distinguished by a large letter "A" in black on a white circular enamelled iron plate.

Colour-light signalling now extends from Churchgate to Virar, a total distance of over 37 miles and includes the following apparatus:—

406 2-aspect and 3-aspect colour-light signals,

28 electric solenoid disc signals,

43 globe type shunt signals,

65 electro-pneumatic points,

85 electric points.

Eight power boxes have been introduced and nine mechanical boxes retained, a total of seventeen, and 21 mechanical boxes removed.

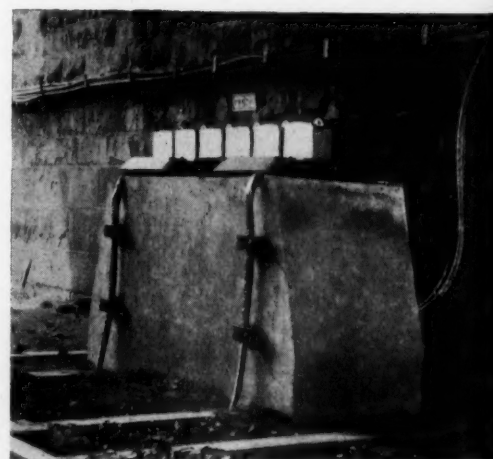
Power Supply

For station lighting and other purposes, a 2,200 V. 3-phase supply runs the whole length of the electrified portion of the railway and from cubicles located at each station a supply at 110 volts is stepped down for signalling purposes. It is distributed by either a twin 7/064 cable or by 7/064 "Endural" covered overhead conductors. They are insulated, to prevent frequent interruptions caused by crows dropping pieces of wire across the lines.

Except where a special relay room



Junction indicator and signal box at Mahim, B.B. & C.I.R.



Track circuit impedance bonds mounted on concrete piers to place them above flood level

exists in the basement, separate rooms have been built adjacent to each power box. Steel relay racks, entirely open, and the open method of wiring are used. Fuse bases are fixed to boards diagonally mounted, so that the cables can come in one side and the internal wires the other. The relay racks are arranged immediately beneath the power frames, access being obtained to the interior of the latter by a steel ladder and platform. Many of the relay rooms have the same appearance as those of the London Transport railways and are modelled on those lines.

Special Conditions

Because of tropical conditions, special arrangements have to be made at some places for the installation of apparatus. At Grant Road, during certain times of the monsoon season, the tracks are flooded, often to platform level, the water being 5 or 6 ft. deep. At certain levels train operation is possible, but the colour-light signals cannot be worked because of the track circuits being flooded. To overcome this, special working is introduced. The signal box is provided with an emergency lever, the key of which is kept in the stationmaster's possession. In case of

flooding, this key is sent to the box, the lever is unlocked and reversed, operating a circuit controller which cuts out all the track circuit controls and permit the colour-light signals to work direct from the levers. Special station standing orders cover this working.

Another trouble caused by heavy rain at Grant Road was that the impedance bonds fixed between the rails at the divisions between track circuits used to get flooded and considerable difficulty was experienced in drying them out. They are now lifted clear of flood level by mounting them outside the track on concrete piers or metal stands. All that is necessary is extra length of track connections.

First Junction Indicator in India

The B.B. & C.I.R. is the first railway in India to make use of the "junction indicator." The advantages of this over a group of colour-light signals are well known. The first indicator was brought into use at Mahim on September 25, 1948, and replaced the up through line starting signals Nos 45, 46 and 47. No. 45 is used by G.I.P.R. trains from the B.B. & C.I.R. up through to the G.I.P.R. Harbour Branch to Victoria Terminus. No. 46 is

the B.B. & C.I.R. up through starting and 47 the up through to up local. Standard indication circuits are installed, as used on the British railways and the control circuits are so arranged that the red aspect cannot be changed until the junction indicator lights are illuminated. Such indicators will be used on all new works and where signal alterations have to take place.

Improved Illuminated Diagram

At Bombay Central box the illuminated diagram, which has been in use since 1930, has recently been replaced by one of more modern design. Difficulty has always been experienced with reflection in the diagram glass. The new diagram is the standard B.B. & C.I.R. white lines on black ground and the front cover glass is acid washed so as to produce a matt surface. The wording and diagram can be clearly seen through the glass but all reflection has been removed.

Panel interlocking is contemplated for certain installations in future works programmes and the existing slide control frames at Parel and Elphinstone Road will also be replaced by panels, as the accommodation in the stationmaster's office at these stations is already limited.

A New Wagon Mover

A NEW type of railway wagon mover, which will enable a 14-ton loaded wagon to be started against a medium gradient, even in bad weather, recently has been brought out by the Angel Truck Co. Ltd., 215-219, Albion Road, Stoke Newington, London, N.16, and as a result of a series of successful tests on British Railways sidings is now being produced on a large scale.

The new appliance, which is known as the Albion railway wagon mover, was constructed originally in malleable castings in 1936. Since then it has been partly redesigned, and at the present time is constructed of high-tensile aluminium alloy with a 7-ft. ash lever handle, which makes for lightness and strength and low cost.

The method of operating the wagon mover, which is illustrated in the photograph reproduced on the right, is simple. The appliance is first placed close under the wheel of the wagon, with the ash handle obliquely raised at a height convenient for leverage, after which an easy pull downwards causes the lever to strike upwards, thus giving a rotary push to the wagon.



Showing the simple method of operating the new Albion railway wagon mover

I.C.I. FILMS FOR TRADE ASSOCIATIONS.—Imperial Chemical Industries Limited announces that it will lend any of its technical, educational, and general interest films free of charge to any official borrower. Some of the films were made specially for the company's internal publicity, but most are of far wider interest. A series now being produced, dealing with each of the company's eleven divisions, will interest those engaged in the numerous other industries that use chemicals in the production of their own finished goods. One of the films concerns the Lime Division and is called "Rock of Industry." It shows the essential rôle of limestone in the manufacture of iron and steel, bleaching powder, and in the building trades, the paper and textile industries, public utility services, railways, the engineering and tannery trades, and in agriculture. All the films

are made for 16-mm. sound projectors. Secretaries of trade and technical associations can obtain them, or receive further information, from the I.C.I. Film Library, Bolton House, Curzon Street, London, W.1.

STRATFORD MUTUAL IMPROVEMENT CLASS FILM.—On March 30, in the Mutual Improvement Classroom at Stratford Motive Power Depot, a film was shown for Mutual Improvement Class representatives of the Eastern Section, Eastern Region. Eight instructional films were shown, including those demonstrating correct methods of firing, the prevention of accidents, fuel economy and running shed procedure. The show opened with an address by Mr. Theobald, Senior Headquarters Inspector, Eastern Section, Eastern Region, and closed with an address by Mr. T. C. B. Miller, District Motive Power Superinten-

dent, Stratford, and President, Stratford Mutual Improvement Class. The class was formed in 1933 and its present membership exceeds 500.

FIBREGLASS LIMITED EXHIBITS AT THE B.I.F.—Fibreglass Limited is showing at the Castle Bromwich, Birmingham, Section of the British Industries Fair (May 2-13) rigid sections for steam pipe insulation, acoustic materials, quilt for sound deadening and thermal insulation in buildings, bitumen bonded for thermal insulation, and woven glass tape for electrical insulation; and a bank of five looms in full operation producing Fibreglass tape for electrical insulation. A wide range of the latest Fibreglass textile materials will be on view, and there will also be a series of photographs showing the various uses of Fibreglass in structural and non-structural applications.

Rapid Renewal of Multiple-Span Bridge

Four old spans totalling 540 ft. rolled out and a similar length of new spans simultaneously rolled into their places in one operation taking only 19 min.



Beginning of moving operation. Old bridge still in original position at right. New structure on falsework at left

THE New York, Chicago & St. Louis Railroad crosses Mackinaw River, Illinois, on a single-line bridge, about 600 ft. in length. As built in 1895, this bridge consisted of the following five spans, in order from east to west: a 59 ft. plate-girder deck span, three Pratt truss deck spans each about 160 ft. in length, and a 55 ft. plate-girder deck span; the abutments and piers were solidly built in masonry. These spans were up to Cooper's E.30 loading only and present-day traffic was subject to a speed restriction over them of 25 m.p.h.

The bridge is at the bottom of a dip in the gradient profile, with long 1 in 143 grades rising from it in each direction; that on the east side extends about 100 ft. out on to the bridge which is otherwise level. The transition of a 24-ch. curve also terminates on the bridge, 100 ft. from the east abutment, but the whole bridge is built on a straight alignment.

The increasingly heavy traffic over the bridge in recent years made it imperative for the superstructure to be replaced by new spans up to Cooper's E.60 loading, though the substructure is perfectly sound and fully up to such loading, and it was, therefore, decided to retain the abutments and piers and design new spans similar in length to the old ones.

Opportunity was taken to combine the advantages of a deeper type of truss span, to provide additional strength with an easing of the gradients on to the bridge, by raising the rail level by 1 ft. 8 in. throughout the structure. Also, to accommodate the transition curve on the new eastern approach span, the latter has been designed with concrete decking to permit the super-elevation to be run out on ballast.

It was further decided that the four eastern spans, old and new, should simultaneously be rolled out and in trans-

versely *en bloc*, but it was considered advisable to lift the old and new western approach spans out and in respectively by crane.

Moving Eight Spans Together

As preliminaries to this method of simultaneous mass renewal, double-bent pile falsework was erected on both sides of the eastern abutment and of the four piers, (a) for the erection of the new spans on the south side, and (b) to support the old spans when rolled out northwards. Also, the old superstructure was jacked up 1 ft. on blocks, and the approach track lifted correspondingly. Meanwhile, the new trusses were assembled near-by and then lifted, one by one, by two locomotive cranes on to the falsework on the south side of the bridge. There, the floor systems and bracings were fitted, the fabrication was completed, and the track was laid throughout these four new spans.

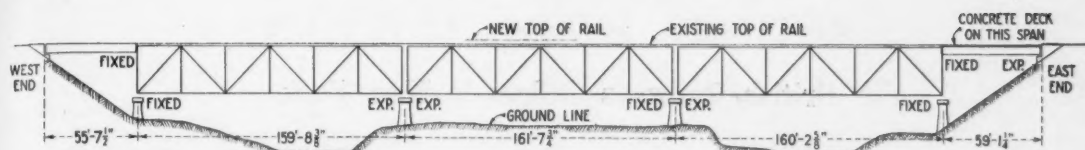
Previously, however, continuous transverse runways, consisting of four rails bolted together, had been laid along the falsework bents and over the substructure between them at each pier; at the eastern abutment a similar type of runway had three rails only. On these runways, rollers were placed under the old and new spans, these rollers being 2½ in. in dia. and spaced 1 ft. 3 in. apart in frames 6 ft. long; the angle-iron sides of the frames were slotted to take the hubs of the rollers and so act as guides. Subsequently, the ends of adjacent frames were spliced together. Resting on the rollers were groups of four and three parallel inverted rails at the piers and abutment respectively, each group forming a continuous bridge seat for both old and new superstructures,

Haulage Arrangements

Rolling movement was effected by block and tackle, rigged between the southern girders of the new spans, and pile anchorages to the north of the falsework at the abutment and at each pier. The



Completion of operation 19 minutes later. New structure in position on piers and abutments at left. Old spans supported on falsework at right



Elevation of the Mackinaw River bridge. In the moving operation a block-and-tackle set was used at each of the four piers and the east abutment

4-in. cables were attached to the bottom chords and at the bottoms of the (vertical) truss end-posts, and passed under both superstructures. To transmit movement to the old spans, thrust blocks were placed between them and the new ones. The lead lines from the five sets of tackle were carried along the north side of the falsework stagings to the west end of the bridge, where they were joined together, all being coupled to a ring.

Careful adjustment was made at the ring to ensure a uniform pull on each of the five sets of tackle, so that the movement of each 540-ft. length of superstructure should keep in perfect line. So accurate was this adjustment that the track on the new spans was nowhere more than

1/2 in. out of line. A further cable connected the ring to the drum of a locomotive crane.

When all was ready, the crane began to exert the pull at 2.46 p.m. on the day of the renewal, and maintained a steady haul until 3.05 p.m., by which time the new spans were in final position over the centre line of the substructure, and the old ones had moved out on to the northern falsework bents, the movement of both four-span superstructures thus having been completed 19 min. after the beginning of the operation.

To finish the job, the western approach span was renewed with the aid of two locomotive cranes, and the track on the approaches to the bridge was lifted the

remaining 8 in. to bring it to new bridge rail level. The spans were jacked up, and the rollers replaced by the permanent girder bearings, and the bridge was ready again for traffic at 6 p.m.

This work was carried out under the general supervision of Mr. J. C. Wallace, Chief Engineer; Mr. R. T. Blewitt, Bridge Engineer, was responsible for the design and execution. The moving of the superstructures was done under contract by the Ferro Construction Company, Chicago, whose President, Mr. H. B. Sierts, devised the method of movement adopted.

We are indebted to our American contemporary *Railway Engineering & Maintenance* for these particulars and for the illustrations reproduced.

New Buses for the Danish State Railways

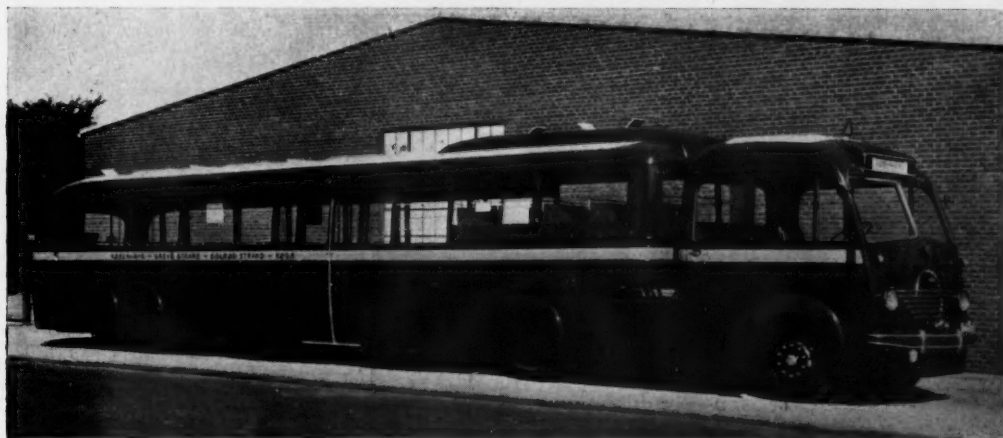
Vehicles of British design

OF the Danish State Railways bus routes the most important is that from Copenhagen to Koge, about 30 miles south-west. The route is heavily trafficked and is operated with large buses with trailers. The latest development is the introduction of a four-axle bus, consisting of a two-axle engine unit and a semi-trailer. There are 56 seats and room for 17 standing passengers. At the present time three of these buses, which are Danish-built and equipped with a Leyland diesel engine of about 130 h.p., are in use.

Further, the Danish State Railways have acquired for this route two British-built double-deck buses. One has a Guy diesel engine of about 61 h.p., and is a 61-seater. The other has a Daimler diesel engine of about 110 h.p., and it is equipped with pre-selective gearbox and hydraulic fly-wheel. The vehicle has 71 seats.



Double-deck bus, Copenhagen-Koge service, Danish State Railways



Articulated four-axle bus for Copenhagen-Koge service, Danish State Railways

British Railways Offices in New York



View of the office from the concourse entrance



View of main office, from the rear, looking towards Rockefeller Plaza

RAILWAY NEWS SECTION

PERSONAL

Mr. W. L. Watson, lately Engineer-in-Chief, Crown Agents for the Colonies, is paying a visit to Ceylon as the Crown Agents' representative to facilitate discussion of work on the locomotive and coaching stock programme of the railway, and other engineering projects.

The resignation has been announced of Mr. M. J. Canny, one of the three Victorian Railways Commissioners. He has been a Commissioner for eleven years.

Mr. R. G. McNeillie, Passenger Traffic Manager, Canadian Pacific Railway, retired on March 31, and has been succeeded by Mr. Ian Warren, hitherto Assistant Passenger Traffic Manager, Montreal.

Mr. Arthur E. Stoddard has been elected President, and a Director, of the Union Pacific Railroad, in succession to Mr. George F. Ashby, who has retired.

Mr. J. W. Booth, Chairman & Managing Director of British South American Airways, has been appointed a member of the board of British Overseas Airways Corporation.

On the joint recommendation of the Presidents of the Royal Society and the Institution of Civil Engineers, the council of the Institution has awarded the James Alfred Ewing Medal for 1948 to Sir Edward V. Appleton.

Colonel (Temporary Major-General) L. Wansbrough-Jones, late R.E., has been promoted Major-General.

Dr. R. W. Bailey, Consultant in the Research Department of the Metropolitan-Vickers Electrical Co. Ltd., has been elected a Fellow of the Royal Society.

Mr. J. G. B. Bruce has been appointed Production Engineer at Acton Works, London Transport.

Mr. A. V. Marshall and Mr. E. Seymour Semper have been appointed Directors of Hancock & Co. (Engineers) Ltd.

RHODESIA RAILWAYS

Mr. R. A. Wingfield-Digby, District Engineer, Broken Hill, has been appointed Water Engineer.

Mr. W. F. Jackson has been appointed Staff Assistant to the General Manager, in place of Mr. A. Morgan, retired.

INSTITUTE OF DIRECTORS

At a recent meeting of the council of the Institute of Directors the following were elected Vice-Presidents: Mr. George F. Earle, Chairman & Managing Director, Associated Portland Cement Manufacturers Limited; General Lord Ismay, Director, Lloyds Bank Limited; Lord McGowan, Chairman, Imperial Chemical Industries Limited; Mr. Oliver Lyttelton, Chairman, Associated Electrical Industries Limited; Sir Robert Sinclair, President-elect, F.B.I., and Chairman, Imperial Tobacco Company; Captain E. C. Eric Smith, Chairman, National Provincial Bank Limited. The following were elected to the council:—Mr. Francis M. G. Glyn, Chairman and a Managing Director, Glyn, Mills & Company; Sir Hewitt Skinner, Chairman & Managing Director, Thomas Skinner & Co. (Publishers) Ltd.

Mr. R. Dell, M.I.Mech.E., M.I.E.E., M.I.R.S.E., who, as recorded in our March 18 issue, has been elected President of the Institution of Railway Signal Engineers, is Signal Engineer to the London Transport Executive. He was born on February 25, 1900, and was educated at the Polytechnic, Regent Street. He entered the Signal Department of the London Underground Railways as an apprentice in 1915, afterwards serving with the Army Service Corps. In 1922 he was appointed New Works Assistant in the Signal Department of the Underground Railways, and was responsible for the installation of the signalling on the line from Golders Green to Edgware. Mr. Dell was appointed Out-



Mr. R. Dell

Elected President of the Institution of Railway Signal Engineers

door Assistant (New Works & Maintenance) in 1925, and was responsible to the Signal Engineer for all outdoor signalling work. On the formation of the London Passenger Transport Board in 1933 he was appointed Assistant Signal Engineer (New Works), and in 1936 he was made an Officer of the Board. In April, 1940, he was appointed Joint Signal Engineer with Mr. R. F. Morkill, and, since Mr. Morkill's retirement from the L.P.T.B. at the end of 1941, has been Signal Engineer. Mr. Dell has been responsible for many improvements in the design of signal apparatus, and has taken out a number of patents, such as the ribbon storage train describer and a focussing arrangement for colour-light signals.

Subsequent to the death of Mr. Ernest Lyall, Manager of Armstrong Whitworth & Co. (Pneumatic Tools) Ltd., Mr. H. W. Winham, Assistant Manager, has been appointed Manager.

Mr. J. W. Kerr, who was recently appointed Treasurer, London Midland Region, British Railways, entered the service of the L.N.W.R. in 1906 as an apprentice clerk in the Audit Department, and later in the same year transferred to the Secretary's Department (Transfer Office). He served with the R.N.A.S. and the R.A.F. from 1916 to 1919, in Malta and France, and on demobilisation in 1919 re-

turned to the Transfer Office of the L.N.W.R. In 1930 he was appointed Chief Clerk, Transfer Office, L.M.S.R., and, in 1935, Assistant to Registrar. Mr. Kerr became Registrar in February, 1942, and in June, 1946, was appointed Assistant Secretary to the company.

Mr. G. A. Musgrave, Motive Power Superintendent, Western Section, Eastern Region, British Railways, is retiring on April 30.

The Minister of Transport has appointed Mr. Thomas Macpherson, M.P., and Mr. Charles Brandon to be Members of the Port of London Authority for three years.

Mr. John R. Greg has resigned from the board of the Birmingham Railway Carriage & Wagon Co. Ltd., of which Mr. P. Middlemas, Mr. C. S. L. Trask and Mr. J. A. Reid have been appointed Directors.

We regret to record the death on March 25, at the age of 82, of Dr. Tice Fisher Budden, M.D., the well-known photographer of railway subjects.

Sir George Beharrell has resigned his Chairmanship of the Dunlop Rubber Co. Ltd., and is succeeded by Sir Clive Baillieu, who has been Deputy-Chairman since 1945. Sir George Beharrell becomes President of the company, and remains on the board. Mr. G. E. Beharrell, Managing Director, continues in that office on becoming Deputy-Chairman. Mr. J. H. Lord, appointed to the board in 1947, takes the title of Director of Finance.

WESTERN REGION APPOINTMENTS

The following appointments are announced in the Western Region, British Railways:—

Mr. R. P. Davis, District Goods Manager, Newport, to be District Freight Superintendent, Paddington.

Mr. A. N. Butland, Divisional Engineer, Taunton, to be Divisional Engineer, Bristol.

Mr. S. Stevens, Assistant Divisional Engineer, Paddington, to be Divisional Engineer, Newport.

HOTELS EXECUTIVE

The Hotels Executive announces the following appointments:—

Headquarters Administrative Officers

Mr. E. J. Davis (formerly Senior Manager, Silver Line Limited, Bishopsgate, E.C.2) to be Purchasing Officer (Provisions & General Stores).

Mr. W. P. Keith (formerly Manager, Hotels & Catering Department, Western Region, British Railways) to be Restaurant Car Superintendent.

Area Superintendents

Eastern Area: Mr. J. L. Meadowcroft (formerly Hotels Superintendent, North Eastern Region, British Railways).

London & Southern Area: Mr. C. G. Jarrett (formerly Hotels Superintendent, Scottish Region (L.N.E.R.), British Railways).

North Western & Midland Area: Mr. E. R. Cottet (formerly Resident Manager, Midland Hotel, Manchester).

Scottish Area: Mr. E. J. Vacher (formerly Resident Manager, Central Hotel, Glasgow).

Retirement

Mr. A. A. Ryan, Hotels Superintendent, Eastern Region, Liverpool Street, London, is retiring shortly, after 45 years service, on reaching the age limit.

The four officers of the New Zealand Government Railways (Mr. P. R. Angus, Chief Mechanical Engineer, Mr. J. W. Porter, Signal Engineer, Mr. C. A. Mackersy, Electrical Engineer, and Mr. A. J. Ede, Transportation Superintendent), who, as recorded in our March 25 issue, are studying railway electrification overseas, recently arrived in Canada, and later left for the U.S.A., after which they will visit the United Kingdom.

Mr. J. M. Harrison, A.R.I.B.A., Architect to the Civil Engineer, Eastern Region, British Railways, who, as recorded in our February 25 issue, has been appointed Architect, Civil Engineer's Department, London Midland Region, held previous appointments as Assistant to Mr. Thomas



Mr. J. M. Harrison

Appointed Architect, Civil Engineer's Department, London Midland Region, British Railways

Rayson, Principal Assistant Architect to the Oxfordshire County Council, and Architect, London & North Eastern Railway. He served with the Royal Engineers from 1940 to 1945, mainly in the Far East, and was demobilised as Lt.-Colonel.

Mr. L. Gupwell has been appointed Commercial Assistant to the Divisional Manager, Midland Division (Freight), Road Transport Executive.

Mr. E. Johnsson has been appointed Managing Director of the Atlas Diesel Co. Ltd.

We regret to record the death, at the age of 70, of Mr. George Frederick Sampson, who was Traffic Manager of the Central Argentine Railway from 1926 to 1943.

Mr. I. S. Puri, Financial Commissioner for Railways, India, has retired from railway service and made over charge to Mr. P. M. Joseph, Director, Accounts, Railway Board, as a temporary arrangement.

The board of Baldwins (Holdings) Limited announces that its Chairman, Colonel Sir W. Charles Wright, now in his 74th year, resigned from the board on March 31. Lt.-Colonel J. B. Nielson has been elected Chairman, and Mr. N. R. M. Macrae, Secretary, has been appointed a Director.

Mr. N. G. Lancaster has been elected a Director of Tube Investments Limited. He has relinquished his partnership with Howard Smith, Thompson & Company.

Sir Francis Brake has been appointed Deputy Chairman of British South American Airways Corporation, in succession to Sir John Stephenson, who has resigned that post on appointment as Chairman, South-East Area Gas Board. Without remuneration, Sir John Stephenson will take the seat on the board of B.S.A.A. vacated by Sir Francis Brake.

At the annual general meeting of the Institute of Metals Dr. W. Hume-Rothery was presented with the Institute Platinum Medal for 1949 in recognition of his outstanding contribution to the science of non-ferrous metallurgy.

PRESENTATION TO MR. AND MRS. ROGER SEWILL

Reminiscences covering a period of twenty or thirty years were exchanged on the occasion of a presentation and complimentary luncheon to Mr. and Mrs. Roger Sewill made by Mr. Frank Milton, Northern Area Secretary of the Road Haulage Association, on behalf of Area Secretaries and the headquarters staff.

Mr. Milton recalled that he had known Mr. Sewill for some seventeen years, and mentioned some of the noteworthy incidents which have happened during that period. He paid a tribute to the magnificent fight Mr. Sewill had put up during the anti-nationalisation campaign in the cause of free enterprise. "Although we lost that particular battle," he added, "we are glad to know that Roger Sewill is continuing the fight of free enterprise in his new position, and I am proud to be associated with him in that fight." Mr. Milton then made the presentation, which consisted of a double dinner and tea service, cut glass salad bowl and table mats.

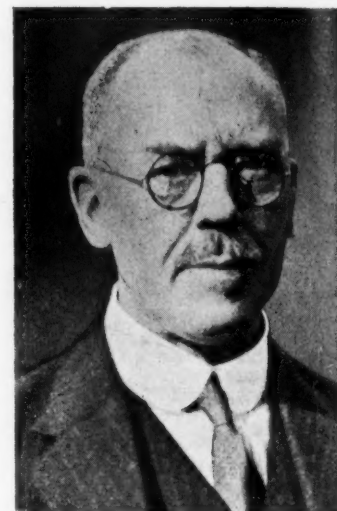
Mr. Horace Wyatt, as senior member of the headquarters staff, read the following message, which had been sent to Mr. Sewill sometime prior to the meeting over the signatures of all those members of the headquarters staff who had served under Mr. Sewill while he was National Director of the R.H.A.:—

We, the undersigned members of the headquarters staff of the R.H.A., who have had the pleasure and honour of serving under you for the whole, or some part, of the time during which you have been the leader and the inspiration of the road haulage industry, wish you, in the great work you are now undertaking, a degree of success commensurate with your proved ability, your powers of leadership and the affection we feel towards you as a guide, philosopher and—more particularly—friend. It would be impossible to wish you any greater success than this.

Mr. Roger Sewill, replying, expressed the appreciation of his wife and himself of their generous and beautiful presents, also of the spirit which had inspired the lunch and presentation and the kind things said about them by Mr. Milton and Mr. Wyatt. He had always known that he had had the complete loyalty of the staff, and he was deeply touched at their expressions of regard and, indeed, of affection.

"I am glad," Mr. Sewill continued, "to have this opportunity of paying my tribute to you. No trade association in the country has a more loyal, devoted, able and efficient staff than the Road Haulage Association, which would be a poor thing indeed without it. I am afraid most of the members take it all for granted. There have always been more kicks than half-pence."

We regret to record the death on March 30, aged 71, of Mr. Samuel L. Glenn, M.I.R.S.E., who retired in 1946 from the position of Commercial Engineer, Metropolitan-Vickers-GRS, Limited. He joined Evans O'Connell & Company, founders of the well-known signalling works at Chippenham, in 1898. Shortly afterwards the British Pneumatic Railway Signal Company was formed, to which he was transferred. He was concerned in the early power-signalling installation at Grateley, brought into service in 1901, and in collaboration with the late Mr. E. C. Irving, installed the first main-line track circuits and the first automatic signals in this country, between Grateley and Andover Junction, L.S.W.R. The growing use of electricity for controlling and operating



The late Mr. S. L. Glenn

Formerly Commercial Engineer, Metropolitan-Vickers-GRS, Limited

signal devices, independently or in conjunction with other forces, caused the British Pneumatic Railway Signal Company to change its title to that of British Power Railway Signal Company, of which Mr. Glenn later became General Manager. He installed for the L.N.E.R. the first large panel controlled scheme, at Thirsk, when Mr. A. E. Tattersall was Signal & Telegraph Engineer for the North Eastern Area of that railway. In March, 1934, Mr. Glenn joined the General Railway Signal Co. Ltd., now Metropolitan-Vickers-GRS, Limited, as Commercial Engineer.

Mr. F. J. Norris, Area Manager for the ports of Goole and Hull under the National Dock Labour Board, has been appointed Staff & Establishment Officer at the headquarters of the Docks & Inland Waterways Executive.

The Skat Club of Birmingham has elected the following officers and committee for 1949:—President: Mr. J. P. Savage; Vice-President: Mr. D. M. Sinclair; Chairman: Mr. A. C. Allen; Vice-Chairman: Mr. H. C. Fleet; Honorary Secretary: Mr. F. Barrett; Honorary Treasurer: Mr. L. F. P. Truman; Honorary Press & Programme Secretary: Mr. E. W. T. Morris; Committee: Messrs. H. Howells, F. D. Oakey, W. H. Pine, E. H. Richards, E. S. Ripley, G. W. Sheppard, W. C. Walton, H. Woolley.

Passenger Traffic-Density in the Provinces

A review of normal week-day winter traffic at Brighton

(From a Correspondent)

In London and, to a lesser degree, in the great industrial cities of the Midlands and North, intensity of passenger traffic at the termini or other principal stations is commonplace and to be expected. In the summer, moreover, holiday resorts also have to cater for very heavy traffic. It is probably not realised, however, that Brighton station, even in winter-time, deals with a remarkable normal weekday volume of traffic.

It has ten platform faces, but one of them is capable of accommodating only very short trains. Three double-track lines radiate from Brighton: (1) to Hove, Shoreham, Worthing, Portsmouth, etc., westwards; (2) to London, northwards; and (3) to Lewes, Eastbourne, Hastings and other places to the east and winter-east. There is, however, a third road, available for down trains from Preston Park into Brighton alongside (2).

On an ordinary winter weekday—Monday to Friday—in the 125 min. between 5.12 and 7.17 p.m. there are at this station no fewer than 41 arrivals and 33 departures, 74 trains in all, including one van or parcels train, but exclusive of all empty-stock workings. On the average, therefore, in these two hours, a train arrives every 3 min., almost exactly, and one departs every 3½ min. In fact, a train is dealt with, in or out, every 1 min. 40 sec., or every 1½ min. if empty-stock workings are included. There are, in addition, many light-engine and some goods movements, the former right into the passenger station. In the morning rush hours the figures are similar, but the direction of flow, of course, is reversed.

Of the 41 arrivals, 17 are from the west, so that on the up road from Shoreham there is a passenger train into Brighton on an average every seven minutes, this figure taking no account of Littlehampton and Worthing to London trains via Hove and Preston Park, which do not run into the central station, and excluding empty-stock, goods, and light engine workings.

As the distribution of these 17 arrivals is of some interest, they are given below:—

5.18	Local from West Worthing
5.22	Through from Plymouth via Salisbury
5.25	From Horsham
5.34	Littlehampton
5.36	Portsmouth
5.47	West Worthing
5.56½	Special railway employee's train from Lancing carriage works
6.0½	From West Worthing
6.7	Portsmouth
6.20	West Worthing
6.28	Horsham
6.33½	Bognor
6.36	Portsmouth
6.50	West Worthing
6.54	Cardiff via Salisbury
7.10	West Worthing
7.17	Portsmouth

From London direct, there are 13 trains in these two hours, but additionally there are three others from London via Oxted and a fourth train originating at Oxted, which run, two via Erridge and two via East Grinstead, and come into Brighton from the east via Lewes. The remaining seven arrivals are also from the east, three from Seaford and four from Ore, via Hastings and Eastbourne.

Only nine of the 41 arrivals are steam-worked, four via or from Oxted, two from Horsham, and one each from Plymouth, Cardiff, and Lancing Carriage Works.

So much for the rush-hour traffic, but even in the quietest hours at midday, between 11 a.m. and 1 p.m., there are no fewer than 59 trains (including two milk trains) arriving or departing, one every two minutes, as compared with 74 and one every 1½ min. in the evening rush hours. In the summer months there are not only additional daily trains to be accommodated, but also relief and excursion trains.

One other small point of interest is that three trains are due to arrive simultaneously at Brighton at 7.17 p.m., one from Portsmouth, one from London Bridge direct, and the third from London Bridge via Oxted and Erridge.

It would be interesting to learn how the traffic density at Brighton compares with that at other provincial centres several times its size, and even with the traffic at some of the less-busy London terminal stations.

Moving the Londoner*

Lord Latham on the problems of the London Transport Executive

The purpose of the Underground Railway is to bring passengers in large numbers from the inner suburban areas and distribute them over the Central Area of London, and later to take them back again. This entails frequent trains, frequent stops, ample door openings, and a high overload capacity provided by plenty of standing room. But a service of this type is subject to very definite limits of time and distance; ideally a tube journey should not exceed 35/40 minutes, which means an optimum distance from the centre of not much more than 12 miles.

The outer suburban service, on the other hand, is concerned primarily with the rapid movement of passengers between the outer suburbs and London. For this, high speed and a high seating capacity are essentials, but less frequent trains than are demanded of the urban Underground service. It is only in the light of these different and conflicting criteria that such matters as the alignment of new railways, the areas to be served by them, the location of stations, and the size and type of rolling stock to be used, can be determined.

Preliminary work on the Bakerloo Line extension to Camberwell is going ahead so that when we are allotted the necessary resources in manpower and materials, including steel—we hope it will be in 1950—we shall be able to make a quick start. This scheme will cost £5,000,000, including £1,000,000 for rolling stock. It will not only provide a much-needed traffic facility in South London but will also enable us to increase the number of trains from 32 to 40 an hour. This is not possible at present because of the inadequate train reversing facilities at Elephant and Castle. Camberwell is a medium-sized scheme and is within the compass of the resources available.

There are also the uncompleted portions of the New Works Programme 1935/40, on which much money has already been

* Abstract from a paper: "Moving the Londoner," read by Lord Latham, Chairman, London Transport Executive, to the Rotary Club of London, on March 23, 1949.

spent. On the Northern Line there is the Alexandra Palace extension, the doubling of the line and electrification between Mill Hill East and Edgware to be completed, and the further extension of the line beyond Edgware to Bushey Heath, and there are further works to be done on the Metropolitan line.

Other areas, I am fully aware, are also in urgent need of transport development, but schemes for these will be of much greater magnitude. I would emphasise that completing these, relatively speaking, smaller schemes should not delay the commencement of the larger ones when circumstances permit.

It is Government policy that the distribution of population and industry in the London region should conform to a plan. This plan is beginning to take shape, and we are now able to assess with some precision the developments and improvements that will be required in the railway system. But there is also urgent need for railway developments to meet existing traffic needs in many parts of London. We must also consider the transport implications of the County of London and Greater London plans. It will be obvious that with all these multifarious and often competing demands railway development cannot proceed piecemeal. A comprehensive plan is essential.

The British Transport Commission accordingly appointed, at the beginning of 1948, a working party of Members and Chief Officers of the London Transport and Railway Executives to go into the whole problem. The working party recently completed its task and has produced a plan for new lines which would be fully integrated with the existing railway systems both of London Transport and the Railway Executive. The report is now being examined by the Minister of Transport who has announced that the Stationery Office will publish it shortly as a White Paper.

Inquiry into United Railways of the Havana Losses

On March 31 the Cuban Cabinet decided to appoint a Government interventor to investigate the serious financial crisis with which the British-owned United Railways of the Havana will be faced over the termination of the present sugar crop about May 15. A degree is being prepared, but there is no indication who will be the interventor or what will be his powers. The impending crisis results from wages having been forced upwards by the previous Government to the utmost that the war-inflated receipts could bear, and which the railway cannot support now because of exceedingly heavy losses in traffic after the exceptional war and immediate post-war periods, and to the spectacular influx of motor vehicles into the country.

The finances of the railway have been crippled by the Government's indebtedness for transport services and properties taken over, amounting to more than \$9,000,000, all, except for a few hundred thousand, incurred by previous Government administrations. At present the Government appears to be unable to lend immediate financial assistance because of alleged debts left by the previous regime, and the railway union refuses to accept a general wage decrease or the dismissal of men who have become redundant. The union is threatening a general railway strike if the interventor appointed is not a union member.

Extension of Cheap Rail Travel Facilities

The Railway Executive announces that, as from April 11, there will be further restorations or extensions of cheap travel facilities on British Railways, these facilities to include:—

Cheap Day Return Tickets: These will be extended experimentally in selected areas within a radius of approximately 30 miles of large towns.

Holiday Runabout Tickets: This facility, giving unlimited travel over wide areas in holiday districts, at fares varying according to the area of availability, will be restored on May 1, after being suspended since 1939. Examples are given below:—

Area covered	Period covered (Days)	Cost
Norwich, Diss, Felixstowe, Aldeburgh, Lowestoft, Yarmouth ...	7	17s. 6d.
Shenfield, Southend, Burnham, Tollesbury, Brightlingsea, Clacton, Walton, Colchester, Braintree ...	7	17s. 6d.
Whitby, Scarborough, Bridlington, Pickering, Malton ...	7	15s.
Glasgow, Clyde coast rail and steamer ...	7	30s.
Dundee, Fife coast ...	6	15s.
Newquay, Falmouth, Helston, St. Ives, Penzance ...	7	15s.
Pwllheli, Dolgellau, Barmouth, Machynlleth, Aberystwyth ...	7	15s.
North Wales, Prestatyn, Blaenau, Festiniog, Holyhead ...	5	15s.
Bognor, Brighton, Seaford, Eastbourne ...	7	12s. 6d.

Day Excursion Bookings: These tickets, issued at single fare for a double journey,

will be introduced between important towns by selected ordinary timetable trains on Saturdays or Sundays up to May 31.

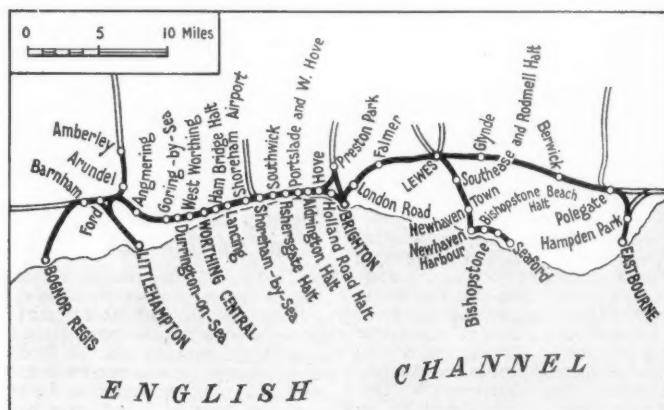
Advertised Circular Tours: These tours in holiday districts, which cover combined rail/road/river/sea tours, are to be developed and extended. Example:—

- (1) Rail ... Paddington—Windsor
Steamer ... Windsor—Henley-on-Thames
Rail ... Henley-on-Thames—Paddington
- (2) Rail ... Paignton—Kingswear
Steamer ... Kingswear—Dartmouth—Totnes
Road ... Totnes—Paignton

Day, Half-day, and Evening Excursion Facilities: In connection with special events, seaside, and other resorts, these facilities will be progressively developed. It is of interest to note that during 1948 over 3½ million passengers were carried on this type of excursion. Detailed arrangements will be announced locally by the Region concerned.

HOLYHEAD TO KINGSTOWN SERVICE.

The new *Hibernia*, first of two 5,000-ton motor vessels ordered by British Railways, London Midland Region, from Harland & Wolff Limited, Belfast, sails from Holyhead on April 14 on her first trip to Kingstown. From that date she will be on the regular run between Great Britain and Ireland. The vessel will carry 2,000 passengers, with cabins and berths for 436 in the first and third class, and special attention has been paid to the dining accommodation, which is on a generous scale.



Two examples of areas served by British Railways runabout tickets

Chippenham Industrial Exhibition

Railway exhibits at a display of Westinghouse Brake & Signal Co. Ltd. products

An extensive display of working exhibits and photographs was on show at an exhibition of Westinghouse Brake & Signal Co. Ltd. products, held in the Town and Neeld halls, Chippenham, between March 25 and April 2. Railway braking was represented by electro-pneumatic equipment of the type supplied to the London Transport Executive for tube trains, and by the vacuum-brake equipment fitted to the London Midland Region main-line diesel-electric locomotives. Standard automatic air-brake equipment also was on view, and a working model layout of a straight air brake, with emergency feature, on an underground diesel locomotive, demonstrated the use of Westinghouse brakes in collieries.

The use of conventional track circuits to indicate the position of trains to signalmen and automatically prevent false signal or point lever movements being made when a track circuit is occupied by a train was demonstrated. The two track circuits shown were a condenser feed track circuit, in which the current limiting device is an adjustable condenser, and a reactance feed track circuit, which uses a transformer to step down the voltage and an adjustable choke to give the required voltage drop when the track is occupied. Although performing the same function as conventional track circuits, the coded track circuit uses energy which is interrupted regularly at the feed end by the contact of a transmitter, thereby forming a continuous train of impulses. By varying the speed of interruption, it is possible to convey different information for each speed from the feed-end to the relay-end of the track circuit, using only the running rails. The demonstration used "no energy," 75, and 120 codes, which controlled red, yellow, and green signals, respectively.

Various Westinghouse systems have been designed to give the signalman a more permanent indication of the type and destination of a train than is possible by bell codes. The description is stored at the receiving end until the signalman is ready to deal with it, or until the train has arrived at that end, and a number of trains can be described between any two points and stored in their correct order of arrival. The particular train describer on view was one of the Westinghouse ribbon storage system which also enables a record of the descriptions to be retained for any further reference and is capable of providing a description of the train destination to waiting passengers, with any further information for their guidance.

Among other signalling exhibits was a centralised traffic control system, which included a control machine designed for a New Zealand installation, that also will embody fifteen field units of a similar type to the two on show. A power-interlocking lever frame on view had 31 operating levers for the control of points and signals. Levers painted black, when moved to the "Reverse" position, close contacts which cause electrically-operated points to move. Red levers, when reversed, make contacts which can be used to clear colour-light, or motor-operated semaphore signals.

Items of equipment under development at the London research laboratory included an application of the Westlyte principle to signal apparatus, and a multiple route indi-

cator and illuminated diagram were shown working. Alongside an automatic message repeater was the train announcer equipment which automatically announces to passengers the destinations and intermediate stops of trains. The equipment is automatic in action and is connected to the existing train describer and track circuits, so that the approach of the train initiates the announcement. A further stand was devoted to an explanation of the necessity for rectifiers and how they operate, with examples of rectifier components at various stages of manufacture and a complete range of units.

Westinghouse Garrard ticket printing and issuing machines are the result of nearly 25 years' practical experience, as the first was installed on the London Underground Railways in 1926. Two types of Westinghouse Garrard machines were on show, the Rapid Printer for suburban and city traffic where the ticket issue is heavy, and the Mini-Printer, designed to suit conditions where it is necessary to issue a large number of tickets of a limited variety in the quickest possible time. The Rapid Printer contains 10, 15, 20, or 25 complete printing units, standing side by side, and enclosed in a cabinet. Each unit is a small printing machine, with a visible check counter, fed from a roll of blank ticket card (sufficient for 2,000 tickets), located in a rack below the unit. The Mini-Printer is supplied with 4, or 6, units; it is fitted into the booking office counter, whereas the Rapid Printer stands on the floor, though the printing units are identical and operate in the same way.

The Engineers' Guild

At a press conference held recently by the Engineers' Guild, Mr. W. S. Graff-Baker, Vice-Chairman of the General Council, and other officers, explained some of the Guild's aims. Some reference to the Guild, which is seeking to widen the scope of its organisation and activities, is made also in an editorial note in this issue.

Mr. Graff-Baker said that the needs of professional engineers were well provided for by the work of the Institutions in the advancement of their particular science, in invention and research, discussion and dissemination of the latest developments, educational training and the standard of qualification. The Institutions, from a technical and engineering point of view, held a leading position in the affairs of the nation, but, as such, were learned societies and were comparable with the Royal Colleges of the medical profession. The work from a professional interest point of view of the B.M.A., however, was missing from engineering. The Institutions had restrictions imposed by their charters, and it was necessary to look to a separate organisation to further those professional interests bearing on the welfare of the members of the profession, the maintenance of unity, public usefulness, honour and interests of the engineering profession. Those were the aims of the Guild, which in no wise conflicted with those of the leading Institutions.

The Guild's organisation is now being developed on a branch basis. The branch districts correspond to the areas covered by the provincial organisations of the three senior Institutions. There are ten districts covering England and Wales, one district for Scotland, one for Northern Ireland and one for overseas. Every member of the Guild will be a member of a branch; there will be no central body of members. All branches will be of equal

status. The Guild is designed to be a federation of branches, unity being achieved through the General Council. Three branches have been inaugurated so far; Metropolitan, West Midlands and Northern Branches; four more (North Eastern, Scottish, Western and Overseas) are due for inauguration before the end of June; and the remaining six, it is planned, will be dealt with during the 1949-50 session.

The address of the Honorary Secretary of the Guild is 28, Victoria Street, London, S.W.1 (telephone Abbey 6511).

United States Warnings Against Transport Nationalisation

Two leading American transport authorities have sounded warnings of gradual nationalisation in the transport field and have declared that these slow processes would lead the United States into a socialised economic system.

In a speech at Wilmington, Delaware, recently, Mr. E. Grover Plowman, Traffic Manager of the United States Steel Corporation, discussed the world trend as related to the United States. Nationalisation of transport, he said, is an "insidious thing." Usually, it comes so gradually and is attended by such elements of necessity that almost before the people are aware of what has happened, the railroads are nationalised.

At the same time, Dr. John Frederick, Professor of Transport at the University of Maryland and analyst for the House of Representatives Interstate Commerce Committee in its protracted national transport survey, stated in Washington that unless the present trends were arrested the day would come when not only the country's railways, but all forms of transport would be unable to continue as private industries.

Mr. Plowman made a similar point. He said that after railways have been nationalised, "it seems necessary or desirable to nationalise all forms of trans-

portation. Then, it appears to be desirable to nationalise other utilities and basic industries."

He outlined various transport nationalisation plans throughout the world. Government control of half the Canadian railways was not surprising because the Government had guaranteed securities for a number of carriers. It established low rates from the Western provinces and from the East coast provinces as political measures to advance the interest of the Dominion Government in these provinces. Nationalisation of the British railways was a shock to the American public. Nationalisation of British transport meant that the British shipper had to deal with an enforced State monopoly.

Dr. Frederick said that American businessmen were indifferent to what was happening in the country. "Conditions in transportation have undergone a revolution," he declared, "but the habit of thought of most people about this industry have not changed in a similar manner. Drastic regulation of competing services is not the solution of the transportation problem. Regulation is expensive. It is bureaucratic. Once established, it expands and it paralyses private initiative without offering constructive leadership. The Government cannot, for the sake of any one agency of transportation, invent and apply to its competitors either regulation or burden on the theory upon which horses are handicapped in a race."

EASTERN REGION ELECTRIFICATION.—On March 23 electric current was switched on for the first time on the Ilford—Chadwell Heath section of the Eastern Region line which is being electrified between Liverpool Street and Shenfield. The illustration below shows one of the new electric trains on a series of trial runs which will be carried out until the inauguration of the service in October. The first electric train was driven by Mr. C. E. Dunster, of Stratford Motive Power Depot, who formerly drove main-line and suburban steam trains out of Liverpool Street.

Trial Run on the Shenfield Line, Eastern Region



A group at Chadwell Heath on March 23 for the trial run of one of the new trains for the Eastern Region electrification. Left to right; Messrs., A. G. Hopking, Assistant to Electrical Engineer (Traction), British Railways, Eastern Region; T. Stockings, English Electric Co. Ltd., Engineer in charge of erection; H. H. Swift, Electrical Engineer, Eastern and North Eastern Regions; L. V. Athron, The English Electric Co. Ltd., Bradford; A. H. Emerson, Senior Technical Assistant (Rolling Stock), Electrical Engineer's Department; S. Hogg, Birmingham Railway Carriage & Wagon Co. Ltd.; and H. Lawton, Metropolitan-Cammell Carriage & Wagon Co. Ltd.

Staff & Labour Matters

Professional and Technical Staff

The adjustments in the rates of pay, as from February 1, 1948, of salaried and conciliation staff in final settlement of the Court of Inquiry recommendations of June, 1947, did not include professional and technical staff employed by the Railway Executive, as the conditions of service of those staffs are covered by separate machinery of negotiation and their rates of pay were fixed in May, 1947, by Railway Staff National Tribunal Decision No. 10.

To keep the professional and technical staff in step with railway salaried staff, the Railway Clerks' Association submitted an application to the Railway Executive for appropriate adjustments to be made in the rates of pay of professional and technical staff.

In settlement of this claim scales of minimum rates as under have been recently agreed with retrospective effect from February 1, 1948, for professional and technical staff covered by Railway Staff National Tribunal Decision No. 10, dated May 28, 1947:—

Male staff in group A: £150 per annum at age 17 rising to £470 per annum at age 36.

Male staff in group B: commencing at £510 per annum, rising to £575 (two increments).

Male staff in group C: commencing at £600 per annum, rising to £630 (one increment).

Female staff: £140 per annum at age 17, rising to £375 at age 36.

Male tracers: £125 per annum at age 15, rising to £345 at age 27.

Female tracers: 40s. per week at age 15, rising to 100s. at age 27.

The London allowance is £10 per annum (4s. per week in the case of weekly paid staff) to all staff falling within the operation of the present agreement whose salaries do not exceed the inclusive figure of £490 per annum.

Questions in Parliament

Railway Workers and National Service

Mr. Sidney Marshall (Sutton & Cheam—C.) on March 22 asked the Minister of Labour at what age post office and railway workers who were granted deferment between the ages of 18 and 20 years because of their employment were expected to do their periods of national service.

Mr. George Isaacs (Minister of Labour & National Service) in a written answer stated: Neither post office nor railway workers are granted deferment because of their employment. Those undergoing an approved course of apprenticeship or professional training can, however, apply to have their calling up deferred until the end of their period of training. The age at which they are eventually called up will depend on the age at which they start the course of apprenticeship or professional training and its duration.

London Travel Facilities

Lt.-Colonel M. Lipton (Brixton—Lab.) on March 28 asked the Minister of Transport when he would publish the report of the working party established by the British Transport Commission relating to travel facilities in London.

Mr. L. J. Callaghan (Parliamentary Secretary, Ministry of Transport): This report is with the printers, and will, I hope, be available in about six weeks time.

Mr. Ernest Davies (Enfield—Lab.): Would the Parliamentary Secretary endeavour to expedite the issue of this report, and, if it cannot be issued from the printers

in less than six weeks, would it be possible to place a summary or an advance copy in the library? I ask that in view of the particular interest in the report in North London, due to the fact that priority is being given to development in South London pending publication of the report.

Mr. Callaghan: This is a long-range project which will involve many years work. I do not think that six weeks is an unreasonable time.

Colonel Lipton: Is there included in this report any proposal to extend the Underground to Brixton, Streatham, and on to Croydon?

Mr. Callaghan: Perhaps Colonel Lipton will read the report and see.

Travel to Northern Ireland

Mr. John E. Haire (Wycombe—Lab.) on March 24 asked the Secretary of State for the Home Department why passports were still required for travel between Great Britain and Northern Ireland.

Mr. Chuter Ede (Secretary of State for the Home Department): Passports or other documents of identity are required to enable the entry of aliens into Great Britain through Eire and Northern Ireland to be adequately controlled.

Mr. Haire: Is not Northern Ireland still an integral part of Great Britain like Scotland and Wales, and is there not national registration there? Why should British subjects moving from one part of the United Kingdom to the other be put to this inconvenience for the sake of a few aliens?

Mr. Ede: It is very necessary at the present time to control the entry of aliens, and there is a land border 180 miles long between Eire and Northern Ireland which it is quite impossible to control for that purpose.

Buenos Aires Transport Corporation

Mr. William Teeling (Brighton—C.) on March 28 asked the Secretary of State for Foreign Affairs how often, since March 14, the British Ambassador in Buenos Aires had contacted the Argentine Government on the subject of compensation for British shareholders in the Buenos Aires Transport Corporation; what reply he had received from the Argentine Government; and whether he had made clear to the Argentine Government that, if discussions on the matter were not opened before the liquidation-of-assets date, namely, April

12, it would have a definite bearing on the new trade agreement negotiations.

Major C. P. Mayhew (Under-Secretary of State for Foreign Affairs): As to the first part of the question, I have nothing to add to the replies given on previous occasions to Mr. Teeling. As to the second part of this question, His Majesty's Ambassador has raised the question of adequate compensation for the British shareholders during the course of the current trade agreements negotiations. I am not in a position to forecast what the outcome will be.

Mr. Teeling: In view of the fact that the Ambassador must be seeing these Ministers almost every day in connection with the trade agreements, can he not ask for a polite reply—for some kind of reply—about whether they intend to open negotiations or not?

Major Mayhew: I can only say that this has been raised during the negotiations. I do not think that while the negotiations are on I should tie the hands of the Ambassador in any way.

Brazil Government and British Stockholders' Compensation

Mr. Evelyn Walkden (Doncaster—Ind.) on March 28 asked the Secretary of State for Foreign Affairs whether he was aware that no compensation had yet been agreed between the Brazilian Government and the Ceara Tramway, Light & Power Company; and, since that British-owned public utility undertaking operating in Brazil had been taken over by Federal Decree in July last, if he would now assure the British stockholders that payment of compensation would be regarded as an essential condition in the settlement of any pending agreements with the Brazilian Government.

Major C. P. Mayhew: The answer to the first part of the question is in the affirmative. As regards the second part, the Secretary of State for Foreign Affairs is not prepared to give in advance so broad an undertaking as that proposed by Mr. Walkden. He may rest assured, however, that His Majesty's Government is most anxious to secure payment of fair compensation to the British shareholders of this company. His Majesty's Ambassador at Rio de Janeiro is continuing to press the Brazilian authorities to respond to the representations he has already made in this matter.

Locomotive Liveries

The Railway Executive statement on liveries for locomotives and passenger coaches, which was published in our Feb-

ruary 4 issue, has been amplified by a schedule showing the types of locomotive that are to be painted in the new liveries.

The liveries will be as follow:—

Livery	Region				
	London Midland	Eastern and North-Eastern	Western	Southern	Scottish
Blue (lined black and white)	4-6-2 "7P"	4-6-2 "A1" "A3" "A4" 4-6-4 "W1"	4-6-0 "King"	4-6-2 "Merchant Navy"	4-6-2 L.M.R. "7p" E. "A3" "A4" "A10"
Green (lined black and orange)	4-6-0 "Royal Scot" "Jubilee" "Patriot"	4-6-2 "A2" 4-6-0 "B2" "B3" "B17"	4-6-0 "Castle" "Star"	4-6-2 "West Country" "Battle of Britain" 4-6-0 "Lord Nelson" "King Arthur"	4-6-2 E. "A2" 4-6-0 L.M.R. "Royal Scot" "Jubilee"
Black (lined)	Passenger tender and tank locomotives not included above; mixed-traffic tender and tank locomotives not included above				
Black (unlined)	Freight tender and tank locomotives				

The Midland Railway Co. of Western Australia Ltd.

The annual general meeting of the Midland Railway Co. of Western Australia Ltd., was held in London on April 5. Mr. Robert W. Adeane, O.B.E., Chairman, presided.

The Chairman said he regretted that once again it had not been possible to get the report and accounts into the hands of the shareholders nearer to the close of the company's year. It would have been earlier this year had it not been for the incidence of the new Companies Act. The balance sheet and profit and loss accounts conformed with the new Act.

Capital expenditure since 1930, when Australia revalued the £, had now been converted into sterling, so that the amount appearing on capital account was now purely a sterling figure. There were, in fact, no figures in the balance sheet which were not sterling figures.

Earnings and Expenses.—The gross receipts of the railway and road services amounted to £232,724, an increase of £64,319. Working expenses at £150,138 were up by £34,221. On the earnings side, goods traffic showed an increase of 48.6 per cent, and tonnage of wheat carried was up by 135 per cent. Passenger traffic, on the other hand, continued to fall, and total receipts from railway passengers amounted only to £24,722. An increase of 33½ per cent, on all rates had come into force on April 7, 1948. On the expenditure side, the main increase had been in the locomotive department, and the expense of maintaining the line was also up. The ratio of working expenses had dropped from 68.8 per cent, to 64.5 per cent, during the year.

Renewals and Reserves.—During the year £36,905 had been expended and a further £15,685 charged to reserve for deferred renewals in accordance with the policy formulated after the Chairman's visit to Australia in 1946.

Capital Expenditure.—During the year £29,561 had been expended on capital account. A large proportion of this amount had been spent on extensions and improvements to the company's road services, which continued to prosper. Those road services had enabled the company to recapture a fair proportion of the railway's passenger receipts which would otherwise have been lost to the company and had further enabled them to effect some economies by "cutting" passenger coaches off mixed trains.

Two years of road service operation had been completed, and after depreciation the net profit for the first year had been £4,541 and for the second year £9,723. Up to June 30, 1948, the railway company had invested £25,356 in road vehicles, land, buildings, and so on.

Arrears of Interest.—Referring to arrears of interest on second mortgage cumulative interest debenture stock, the Chairman said that the Board had decided to pay interest in respect of the 12 months ended December 31, 1945. This amounted to 4 per cent., equal to a gross sum of £23,694 8s., and had been duly paid on March 30, 1949.

Beam Transport Company.—The company's investment in this concern had been increased during the year by £5,180, bringing the total value of its share holding to £22,908, equivalent to just over 28 per cent, of the issued capital. The Beam Transport Company had again paid 8 per cent., which rate of dividend it had maintained for six years.

Mungedar Pastoral Co. Ltd.—The value

of their 46 per cent. holding in this company amounted to £17,928. One of this company's two properties, the Mungedar Station, had been sold since the end of the financial year for approximately £40,000, including stock, and this price was considered by the Board to be satisfactory. The other station, the Irwin River, remained; its disposal was considered.

Land sales.—Continuing high prices for wheat, wool, and meat had ensured a continuance of interest in farming land, and speculative interest had spread during the year to the very light lands; 36 lots had been sold during the year, totalling 35,755 acres, for £8,800. The balance of land at the end of the year amounted to 521,696 acres, and since the close of the year sales had been kept at a fair price.

First Mortgage 4½ per cent. Debenture Stock.—During the year £23,200 of these debentures had been redeemed, leaving an amount of £50,611. On January 4, 1949, £18,000 nominal had been drawn for redemption, but this redemption would not be reflected until the 1949 accounts were published.

Prospects.—There had been some drought this year and the company had had to use its own reserve of water much earlier than in 1948. Nevertheless, the wheat crop appeared to be good and the monthly returns for both railway and road services continued to show moderate increases.

Staff.—Mr. H. B. Jackson, K.C., had visited England in May, 1948, and the opportunity had been taken by the Board to discuss railway problems with him.

The report and accounts were adopted.

Western Region Festival of Music and Drama

That the love of music and drama is deeply ingrained in railway families of the Western Region was vividly illustrated at Reading from March 21 to 26, when more than 2,500 competitors—employees and their dependents—came from all parts of the Region to take part in the annual festival of music and drama.

Promoted annually by the Western Region Staff Association the festival—the nineteenth of the series—was in the opinion of both adjudicators and audiences the most memorable of them all. Thirty separate sessions were required to present the comprehensive programme and these were held in the Town Hall and the Palmer Hall at Reading.

The classes—120 in all—afforded the widest possible scope for the musical and dramatic talents of the competitors. Throughout the week audiences were delighted by the high-quality renderings in the orchestral, instrumental, vocal, and choral events and those for verse speaking, literature, public speaking, debating, poetry, and drama.

Successes were gained by competitors from practically every grade in the railway service, including engine drivers, clerks, firemen, signalmen, lorry drivers, porters, carriage cleaners, station masters, foremen, and their wives and dependents. Classes specially designed for matrons and retired employees were more popular than ever. There is no doubt that this annual cultural event provides admirable opportunities for railwaymen and their families to give expression to their artistic abilities.

The team of adjudicators included Mr.

Edric Cundell, Hon. R.A.M., F.G.S.M., Principal of the Guildhall School of Music and Hon. Director for Music to the Staff Association; Dr. Herbert Howells, F.R.C.M., F.R.C.O., Hon. R.A.M.; Dr. Denis Wright; Mr. Albert Howe, Mus. Bac. F.R.C.O., Hon. A.R.C.M., F.G.S.M.; Mr. E. Guy Pertwee, F.G.S.M., A.R.A.M. (Hon. Adviser for Dramatic Art to the Staff Association); and Mr. W. H. M. Woodley, Editor, *Western Region Magazine*. Their friendly criticisms and advice gave encouragement to those who succeeded and stimulated to further efforts those who returned without awards.

Mr. W. P. Allen, Member of the Railway Executive, presided at the grand finale on Saturday evening, when he stated, on behalf of the Executive, that he wished to see the principles of the Western Region Staff Association introduced in other Regions of British Railways. On Wednesday evening the Chair was occupied by Mr. K. W. C. Grand, Chief Regional Officer and President of the Association, while other Chief Officers of the Region presided at the remaining sessions.

The festival was directed by Mr. Charles A. Humphries, Chief Welfare Officer, Western Region.

R.C.T.S. Coming-of-Age

On Saturday last, April 2, the Railway Correspondence & Travel Society held at the Charing Cross Hotel, London, its 21st Anniversary Dinner, under the Chairmanship of Mr. George R. Grigs, and, for the first time, ladies were invited to be present. The guests included Messrs. D. S. M. Barrie, M.B.E., Public Relations Officer to the Railway Executive; L. P. Parker, O.B.E., Motive Power Superintendent, Eastern Section, Eastern Region; George Dow, Press Relations Officer, Eastern & North Eastern Regions; T. J. Lynch, Secretary, Railway Clearing House; J. N. Maskelyne, Editor, *Model Railway News*; Charles F. Klapper, Assistant Editor, *Modern Transport*; Charles E. Lee, Associate Editor, *The Railway Gazette* and *The Railway Magazine*.

The Society was founded in 1927 with eight members as the Cheltenham Spa Railway Club, and was re-formed under its present title on January 5, 1928. By 1933, the membership had grown to 301, and at the beginning of the present year totalled no fewer than 2,404. The objects are to extend interest in railways, and to afford members opportunity for studying various aspects of railway working. It consists of well-informed enthusiasts, and is the largest organisation of its kind.

The toast of "British Railways" was proposed by Mr. D. R. Pollock, Joint Honorary Editor of the Society's monthly publication, *The Railway Observer*, and responded to by Mr. Parker. Mr. Barrie proposed "The Railway Correspondence & Travel Society," to which the response was given by Mr. E. J. Nicholls, Honorary Secretary and Treasurer of the Society, who gave an interesting brief survey of the development of the activities during the past 21 years. "The Ladies and Visitors" were proposed from the Chair, and Mr. Charles E. Lee responded on behalf of the guests, and Mrs. H. M. Nicholls on behalf of the ladies.

The event was a happy occasion, and very well organised, and it exemplified something of the value as well as the interest in informed study of, and enthusiasm for, railways, on the part of those not directly associated with the industry.

Notes and News

Diesel Engine Users Association.—The annual luncheon of the Diesel Engine Users Association will be held at the Connaught Rooms, Great Queen Street, London, W.1, on April 21.

Renaming of Southend Stations.—The Eastern Region of British Railways announces that the former L.N.E.R. station at Southend is to be re-named Southend Victoria and the former L.M.S.R. station Southend Central.

Assistant Engineers (Civil) Required.—Applications from qualified candidates are invited for the posts of assistant engineers (civil) required by the Crown Agents for the Colonies for their London Office. See Official Notices on page 395.

Bridge Inspector Required.—Applications are invited for the post of bridge inspector required by the Crown Agents for the Colonies for service in Ceylon. Engagement is for two years with possible extension. See Official Notices on page 395.

Engineer for Bridge Investigation Required.—Applications are invited for the post of engineer for bridge investigation required by the Crown Agents for the Colonies for service in Ceylon. Engagement is for two years with possible extension. See Official Notices on page 395.

Platform Train Indicators for Central Line.—Platform train indicators are to be installed at the principal stations on the Central Line of London Transport. The indicators, which will be similar to the latest type in use on other lines, will inform passengers of the destination of the first and second trains arriving. A prototype indicator is being installed this week at St. Pauls Station, and, after it has been tried, indicators will be ordered for all eastbound platforms at White City and from Marble Arch to Leytonstone. Indicators will be on all westbound platforms from Liverpool Street to North Acton. The indicators will be worked automatic-

ally by the trains themselves and will involve the installation of 322,100 yards of special wiring. It is hoped to complete the installation by the end of this year.

North British Locomotive Works in South Africa.—A works is to be established in South Africa by the North British Locomotive Co. Ltd. and a subsidiary company has already been formed for this purpose. A site for the new works has been purchased at Springs, about 30 miles from Johannesburg.

Railway Union to Discuss Tribunal Wage Decision.—A special delegate conference of the National Union of Railwaymen in London on April 21 and 22 will hear a report of the union leaders on the rejection by the Railway Staff National Tribunal of the claim for an extra 12s. 6d. a week. Eighty delegates will represent 450,000 members.

Canadian Pacific Railway February Earnings.—The Canadian Pacific Railway suffered a net loss of \$194,000 on February operations, compared with a net loss of \$301,000 in January. February gross earnings totalled \$26,900,000 (against \$27,767,000 in January) and working expenses amounted to \$27,094,000 (against \$28,069,000).

Channel Tunnel Project.—Some 200 M.P.s of all parties have tabled in the House of Commons a motion urging the Government to approach the French Government and other Governments of Western Europe with a view to undertaking jointly a fresh examination of the project to construct a tunnel between Britain and France. The motion suggests that work on the tunnel in the first five years would be confined to the construction of a pilot tunnel which would cost Britain and France no more than about £1,000,000 annually each and would require relatively little plant and manpower.

Trolleys for Snack Service in Trains.—Lord Inman, Chairman of the Hotels Executive, at a press conference on March 31, stated that a narrow trolley, only

11 in wide, had been designed to facilitate the service of snacks and non-alcoholic beverages on corridor trains to augment restaurant-car facilities. These trolleys are already in use on some trains in the North Eastern Region, and it is intended to introduce them throughout the system of British Railways. Lord Inman said that even if the corridors were crowded, the trolleys would be useful, for either the standing passengers could move into the compartments while the trolley passed along the corridor, or, if overcrowding of the train was too great to permit of this, the trolley could be placed at the end of the corridor and its contents distributed from that position, or it could be used on platforms outside the train during stops at stations. On trains which had no restaurant-car or buffet-car attached it would prove a useful means of providing passengers with light refreshments, and on trains which had buffet cars or restaurant cars it

would meet the needs of those passengers who did not wish to avail themselves of the full service provided, but who desired light refreshments.

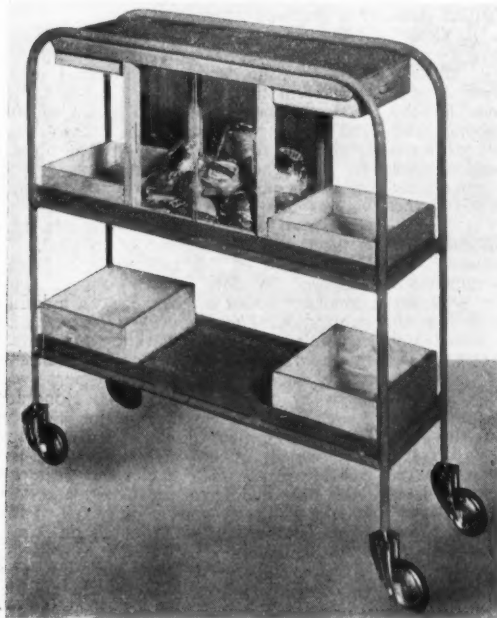
Office Assistant Required.—Applications are invited from qualified candidates for the post of office assistant required by the East African Railways & Harbours for the chief mechanical engineer's office, Tanganyika, for one tour of 24 to 48 months in the first instance. See Official Notices on page 395.

Director of Research Required.—The Railway Executive invites applications for a Director of Research. Candidates must have high qualifications with a wide experience of general research and its application on broad lines to industrial problems, as well as having been in control of a research organisation. See Official Notices on page 395.

British Railways Ambulance Contest for Women.—Sixteen teams of British railways, London Midland Region, ambulance women are to compete for the L.M.R. Women's Ambulance Cup at Derby on April 11 and 12. This is the highest number of entrants since the war. The teams come from Crewe, Birmingham, Sheffield, Derby, Chester, London, Manchester, Horwich, and Dublin. Mr. W. P. Allen, Member of the Railway Executive, will present the prizes, and Mr. H. J. Comber, Chief Officer for Labour & Establishment, London Midland Region, will preside.

Special B.I.F. Trains from Euston.—Two special restaurant car trains will be run from Euston by the London Midland Region for visitors to the Birmingham Section of the British Industries Fair. The trains, one first class only and the other third class only, will run each weekday, except Saturday, May 7, for the duration of the B.I.F. from May 2-13. The first class special will leave Euston for Castle Bromwich at 8.45 a.m., due 11.23 a.m., and the third class train at 8.20 a.m., due 10.56 a.m. Return trains will leave Castle Bromwich at 6.12 p.m. (first class) and 6.05 p.m. (third class) and will be due at Euston at 9.06 p.m. and 8.57 p.m. respectively. The two trains will provide a total of approximately 1,000 reservable seats, 784 of them in restaurant cars, which may be booked only at Euston Station, the British Railways stand at the London Section of the B.I.F., or at a few of the principal London travel agencies.

Government Purchase of Northern Counties Railway.—Both Northern Ireland Houses of Parliament have approved of the agreement made between the Northern Ireland Transport Authority and the British Transport Commission for the acquisition of the undertaking in Northern Ireland under the management of the Northern Counties Committee. In the Northern Ireland Senate, Sir Roland Nugent, Minister of Commerce, said the property to be acquired consisted of the whole undertaking of the N.C.C. in Northern Ireland, including the physical assets, land, building, rolling stock, equipment and so forth, and liquid assets to the net value of £713,000. The undertaking over the past 25 years (1923-1947) inclusive had shown a profit in 19 years and a loss in six years. The net revenue has been just over £2,500,000 in the period. The undertaking had been maintained to a high standard and the traffics were large. Goods traffic, for instance, in 1947 was 631,000 tons and gross freight revenue £330,070; passenger traffic 4,383,000; and gross passenger revenue £615,075. The statutory price paid by the



Trolley for serving snacks in corridor trains on British Railways (see accompanying paragraph and page 371)

OFFICIAL NOTICES

Crown Agents for the Colonies

None of the vacancies on this page relates to a man between the ages of 18 and 50, inclusive, or a woman between the ages of 18 and 40, inclusive, unless he, or she, is excepted from the provisions of the Control of Engagement Order, 1947, or the vacancy is for employment excepted from the provisions of that Order.

Crown Agents for the Colonies

APPLICATIONS from qualified candidates are invited for the following post:—
ASSISTANT ENGINEERS—CIVIL required by the Crown Agents for the Colonies for their London Office. Salary scale £475-£750. The £475 minimum is linked to entry age at 25 with the addition of £25 for each year above that age up to £600 and subtraction of £25 for each year below 25. Commencing salary fixed according to qualifications, experience, and age. Extra duty allowance of 8 per cent. of annual salary also payable. There is a non-contributory Office Gratuitous Scheme providing superannuation benefits. Before assuming duties with the Crown Agents the persons engaged will be required to undertake a period of service (not exceeding four years) in one of the colonies for which a higher rate of salary and an outfit allowance are payable.

Qualifications.—Chartered Civil Engineer or exemption from Parts A and B of the examination of the Institution of Civil Engineers. Should have had at least two years practical experience of civil engineering works and should have had either (a) experience in design, construction and maintenance of roads and bridges, buildings and waterworks, or (b) general experience on railway maintenance, including permanent way, bridge works and reinforced concrete construction.

Duties: Post (a), general duties of a civil engineer in a public works department, including design, construction and maintenance of roads, bridges, buildings, and water works, or (b) to take charge of an open line section of a railway.

Apply at once by letter, stating age, whether married or single, and full particulars of qualifications and experience, and mentioning this paper, to the Crown Agents for the Colonies, 4, Millbank, London, S.W.1, quoting M/N/24636/3D for post (a) and M/N/24637/3D for post (b) on both letter and envelope.

WANTED.—Double-Side Tipping Wagons, 300 cu. ft., standard gauge.—Box 307, The Railway Gazette, 33, Tothill Street, London, S.W.1.

British Transport Commission for the undertaking under the provisions of the British Transport Act was approximately £3,400,000 and the assets represented an original capital investment of £3,888,000. The agreement provided for close relations and co-operation with the British Transport Commission, and the Northern Ireland Transport Authority would act as its agents.

Western Region Produces "The Linden Tree."—Mr. J. B. Priestley's play "The Linden Tree" is being presented by the G.W.R. (London) Dramatic Society, at the Park Theatre, Hanwell, today and Saturday, April 8 and 9, at 7.15 p.m. The rôles of "Isabel Linden" and "Professor Robert Linden" will be played by Phyllis Griffiths and Arthur Clapp, who have taken leading characters in many previous productions of this society, and, among the supporting cast, there will be Jean Heyman, Peter Blay and Kenneth Hudson, who will be making their first appearances on the amateur stage. Monica Scott, who is playing the part of "Dinah Linden," was a finalist in the verse-speaking contest of the Western Region Festival of Music & Drama, at Reading, in 1948.

Canadian National Railways Take Over Newfoundland Railway.—With the confederation of Newfoundland as the tenth Canadian Province on April 1, operation of the Newfoundland Railway is taken over by the Canadian National Railways System. In addition to the 705-mile line between St. Johns and Port-aux-Basques, a journey occupying about 26 hr., the Newfoundland Railway has a fleet of passenger-freight steamers to and from Canadian ports, with a number of small motor vessels serving outlying parts of the New-

foundland coast. The voyage by steamer across Cabot Strait from Port-aux-Basques to Sydney, Nova Scotia, occupies eight to ten hours. On the railway new equipment has been added in recent years, including steel Pullman cars, dining cars, and day coaches. In 1948 passengers carried totalled 274,497, freight carried was 856,560 tons, and employees totalled 4,169. With the addition of the Newfoundland Railway, the Canadian National Railways System mileage will now total 24,109, and the employees 115,241.

Continental Boat Train Alterations.—With the introduction of Summer Time on April 3, the "Golden Arrow," Night Ferry, and Dover—Ostend services to the Continent leave Victoria one hour later than formerly. The Newhaven—Dieppe service leaves 35 min. later and the Folkestone—Calais service 30 min. later. The new timings are:—

Dep. Victoria Arr. Paris
 Dover-Calais ... 10.0 a.m. 6.0 p.m.
 10.30 a.m. 5.30 p.m.
 Dover-Dunkirk ... 10.0 p.m. 9.30 a.m.
 Dover-Ostend ... 9.0 a.m. —
 Newhaven-Dieppe ... 9.5 a.m. 6.46 p.m.
 Folkestone-Calais ... 2.0 p.m. 10.40 p.m.

The inwards services arrive at Dover, Folkestone, and Newhaven one hour later, except the night ferry, which remains unaltered.

House Flag for B.R. Ships.—About 150 ships belonging to British Railways hoisted their new house flag for the first time on April 4. Ships to wear the new flag, which was illustrated on page 204 of our February 25 issue, include those sailing from Dover, Folkestone, Newhaven, Portsmouth, Southampton, and Weymouth to

Crown Agents for the Colonies

APPLICATIONS from qualified candidates are invited for the following post:—

BRIDGE INSPECTOR required by Crown Agents for the Colonies for service in Ceylon. Engagement for 2 years with possible extension. Salary according to age and experience up to £900 a year. Outfit allowance £60. Free passages. Candidates should have had good experience with British or Commonwealth Railway or firm of bridge constructors. Accustomed to supervise artisan staff. Apply at once by letter stating age, whether married or single, and full particulars of qualifications and experience, and mentioning this paper, to the Crown Agents for the Colonies, 4, Millbank, London, S.W.1, quoting M/N/24613/3D on both letter and envelope.

Crown Agents for the Colonies

APPLICATIONS from qualified candidates are invited for the following post:—

ENGINEER FOR BRIDGE INVESTIGATION required by Crown Agents for the Colonies for service in Ceylon. Engagement for 2 years with possible extension. Salary according to age and experience up to £1,500 a year. Outfit allowance £60. Free first class passages. Candidates must be Chartered Civil Engineers preferably with an Engineering degree. Should have had good experience with British or Commonwealth Railway or firm of Constructional Engineers in calculating strength of bridges. Apply at once by letter, stating age, whether married or single, and full particulars of qualifications and experience, and mentioning this paper, to the Crown Agents for the Colonies, 4, Millbank, London, S.W.1, quoting M/N/24612/3D on both letter and envelope.

5-TON GRABBING CRANE by Clarke, Chapman & Co. Level luffing and slewing, 38 ft. jib, max. radius 30 ft., tail radius 12 ft. Rail centres 11 ft. 10 in. Depth of grabbing 28 ft. below rail level. Height of discharge 14 ft. above rail level. A 4-motor crane for 400/3/50 supply. Complete with Priestman Grab and rail-mounted Steel Hopper. In excellent condition. Full details from: Cox & Danks Limited, Plant & Machinery Dept., Faggs Road, Feltham, Middx. 'Phone Feltham 3471.

INTERNATIONAL RAILWAY ASSOCIATIONS.

Notes on the work of the various associations concerned with International traffic, principally on the European Continent. 2s. By post 2s. 2d.

the Continent and the Channel Islands; Portsmouth and Lymington to the Isle of Wight; Harwich and the Humber ports to the Continent; Holyhead and Heysham to Ireland. River Clyde and Loch Lomond steamers, Plymouth tenders, vessels engaged in ferry service, and British Railways marine shore establishments, will also hoist the new flag.

Metropolitan-Vickers Electrical Co. Ltd.—On July 10, fifty years ago, the company now known as Metropolitan-Vickers Electrical Co. Ltd., was incorporated as the British Westinghouse Electric & Manufacturing Co. Ltd. The occasion will be suitably celebrated during July, but to mark the Jubilee year an attractive calendar has been issued.

Paintings for Posters.—The Prime Minister opened an exhibition of original paintings for London Transport posters, at the Victoria & Albert Museum, on April 5. The paintings range over a period of 40 years and apart from their artistic qualities, are an indirect commentary on the London way of life. The exhibition, which is known as "Art for All," will be open to the public until June 30.

London Transport Players.—Last week at the Scala Theatre, London, the London Transport Players gave four performances of the musical comedy "Tulip Time." Mr. Cyril Coker, Producer & Stage Director, Mr. Horace Warton, Musical Director & Conductor of the London Transport Orchestra, and the cast of 70, all are to be congratulated on their rendering of the choral, dancing, and humorous numbers; the latter particularly were well received by the audiences. Outstanding principals were the Misses Joyce Gall, Mary

Meade, Joan Partington, Paula Penzer, and Winifred Sealy, and Messrs. Cyril Corker, James Lewis, and Ray Ravenswood. The London Transport Players are presenting "Tulip Time" in the L.C.C. Festival of Light Opera this summer.

Murex Limited Exhibits at B.I.F.—At the Castle Bromwich, Birmingham, section of the British Industries Fair (May 2-13), Murex Limited will exhibit a wide range of metals, non-ferrous and ferrous alloys, and salts of tungsten, molybdenum, and vanadium. Samples of sections of railway and tramway tracks, welded by the "Thermit" process, will be shown.

Forthcoming Meetings

- April 8 (Fri.).—Institution of Railway Signal Engineers, in the London Transport Executive Signal School, Earls Court Station, at 6.15 p.m. "Track Circuits," by Mr. W. H. Challis.
- April 8 (Fri.).—Institution of Railway Signal Engineers, at the Institution of Electrical Engineers, Savoy Place, London, W.C.2, at 6 p.m. "Automatic Ticket Machines," by Mr. B. J. Powers.
- April 8 (Fri.).—Railway Club, at 57, Fetter Lane, London, E.C.4, at 7 p.m. "Early History and Humour of the Danish Railways," by Mr. M. D. Greville.
- April 9 (Sat.).—British Railways, Southern Region, Lecture & Debating Society; visit to Gas Light & Coke Company, Beckton, at 2.15 p.m.
- April 9 (Sat.).—Permanent Way Institution, London Section; exhibition of P.W.I. and civil engineering films, at Boston, at 2.30 p.m.
- April 9 (Sat.).—Permanent Way Institution, Manchester & Liverpool Section, in the Temperance Institute, London Road, Southport, at 2.30 p.m. "Oil," by Mr. E. T. Hutt.
- April 11 (Mon.).—Institute of Traffic Administration, Merseyside Centre, at the Adelphi Hotel, Liverpool, at 8 p.m. "The Science of Traffic Administration," by Mr. R. P. Bowyer.
- April 12 (Tue.).—Institute of Traffic Administration, Manchester Centre, at the Grand Hotel, Manchester, at 7 p.m. "The Science of Traffic Administration," by Mr. R. P. Bowyer.
- April 12 (Tue.).—Institute of Transport, informal luncheon, at the Connaught Rooms, Great Queen Street, W.C.2, at 12.45 for 1.15 p.m. Address by Mr. L. J. Callaghan, Parliamentary Secretary, Ministry of Transport.
- April 12 (Tue.).—Institution of Mechanical Engineers, Storey's Gate, St. James's Park, London, S.W.1, at 6 p.m. Discussion on: "Fatigue Strength of Cast Crankshafts," by Messrs. H. R. Mills and R. J. Love.
- April 13 (Wed.).—Institution of Locomotive Engineers, in the hall of the Institution of Mechanical Engineers, Storey's Gate, St. James's Park, London, S.W.1, at 5.30 p.m. Annual general meeting and the Sir Seymour Biscoe Tritton Lecture: "The Influence of the Treatment of Boiler Waters on the Maintenance and Utilisation of Steam Locomotives," by M. Louis Armand, Deputy General Manager, French National Railways.
- April 13 (Wed.).—Institute of Welding, North London Branch, at the Polytechnic, Regent Street, at 7.30 p.m. Annual general meeting.

Railway Stock Market

Budget influences have dominated stock markets. Earlier in the week these showed firmness and well maintained recent gains. Strength of British Funds was a feature in anticipation of a statement foreshadowing a big conversion operation in respect of the £714,000,000 of National War Bonds (1949-51). The market continues to expect that the £200,000,000 of British Gas stock to be created on May 1 will be longer-dated than existing nationalisation stocks. It is assumed that this will be a 3 per cent. security and in the circumstances it is being predicted that existing British Transport stocks are likely to move higher. Transport (1978-88) has further strengthened to nearly 101½, with Transport (1968-73) at 102½. Earlier hopes of purchase tax reductions brought small gains in a wide range of industrial shares.

There was again a good deal of speculative activity in Brazil rails. Great Western of Brazil has been singled out with a sharp advance to 127. The pay-out terms announced in respect of B.A. Central emphasised the view that senior debenture stocks stand to gain most. Prior to the announcement B.A. Central first debentures were quoted at £34½ and have since risen to £58.

Leopoldina debentures were favoured, the 4 per cents having advanced to 90½, the 6½ per cents to 120, and Leopoldina Terminal 5 per cent. debentures to 91. Leopoldina ordinary stock, after being over 10, eased to 9½, and the preference stock at 32½ also failed to hold best levels. Leopoldina Terminal £1 shares were quoted at 1s. 9d. Antofagasta ordinary was 9 and the 5 per cent. preference 56. San Paulo ordinary attracted attention and improved to 149 on renewed hopes that outstanding compensation claims may be settled before long. United of Havana 1906 debentures have remained more active around 14½. Manila Railway securities strengthened in anticipation of up-to-date information of the position

following the scheme of arrangement providing for a further moratorium period. Mexican Railway 6 per cent. debentures were 86½. Beira Railway bearer shares firmed up to 46s. and Canadian Pacific rallied to 19½. French Railway sterling bonds moved fractionally lower where changed.

Road Transport shares have held firm, particularly those of the B.E.T. Companies, which in many cases offer quite attractive yields with good prospects of dividends being maintained. Moreover, it is believed that current market prices are well below break-up values, and that take-over terms, whether ultimately arrived at on a voluntary or compulsory basis, would be above current market values. Scottish Motor Traction were steady at 104s. 6d., Southdown 160s., and Lancashire Transport 88s. 6d.

Iron and steels have been steadier with hardly a movement in shares of companies scheduled for nationalisation. Elsewhere, Vickers, after rising sharply to 32s., have eased to 31s. 9d. at the time of writing, awaiting the financial results. Babcock & Wilcox were 66s., T. W. Ward 63s. 9d., and Guest Keen 47s. 3d. Shares of locomotive building and engineering companies have been steadier. Birmingham Carriage & Wagon rose to 32s. 6d. with news of the increased profit for the past year. Gloucester Wagon were 52s. 6d., Beyer Peacock eased to 22s., North British Locomotive were 21s., and Vulcan Foundry 23s. 9d. Wagon Repairs have been steady at 20s. and in other directions Charles Roberts strengthened to 138s. 9d. on market estimates of the capital return expected from compensation for wagons.

British Aluminium rallied 1s. to 47s. 6d. Oil shares lost ground on fears of a price war between the big American groups. Shell fell to 63s. 1½d., and Anglo-Iranian to £8½, but there was little selling reported. On the other hand, earlier in the week C. C. Wakefield rose 2s. 6d. to 72s. 6d.

Traffic Table of Overseas and Foreign Railways

	Railways	Miles open	Week ended	Traffics for week		No. of week	Aggregate traffics to date			
				Total this year	inc. or dec. compared with 1947/48		Total	Increase or decrease		
							1948 9			
South & Central America	Antofagasta...	811	27.3.49	£ 73,220	+	£ 32,470	12	£ 861,580	+	£ 197,800
	Bolivar ...	174	July, 1948	\$28,960	—	\$69,357	30	\$471,287	—	\$301,893
	Brazil ...	...	...	...	...	...	...	...	...	...
	Cent. Uruguay ...	970	6.11.48	32,712	+	2,978	18	593,105	—	7,652
	Costa Rica ...	281	31.1.49	35,772	—	3,648	31	250,009	+	12,870
	Dorada ...	70	Jan., 1949	31,649	+	8,549	4	31,649	+	8,549
	G.W. of Brazil ...	1,040	26.3.49	38,100	+	6,800	12	490,400	—	3,400
	Inter.-Cl. Amer. ...	794	Feb., 1949	\$99,184	—	\$183,327	8	\$2,088,986	—	\$382,179
	La Guaira ...	22½	Mar., 1949	\$113,758	—	\$9,571	13	\$329,753	+	\$38,114
	Leopoldina ...	1,920	26.3.49	40,598	—	13,595	12	571,542	—	94,405
	Midland Uruguay ...	319	Sept., 1948	19,608	+	3,123	12	67,355	+	16,721
	Nitrate ...	382	31.3.49	21,735	+	5,745	13	105,267	+	32,276
	N.W. of Uruguay ...	113	Sept., 1948	5,686	—	1,213	12	16,335	—	1,989
	Paraguay Cent. ...	274	25.3.49	\$91,027	+	\$31,283	38	\$3,948,165	+	\$1,389,743
	Peru Corp. ...	1,059	Feb., 1949	221,585	+	69,198	35	1,604,881	+	245,802
Canada	Salvador ...	100	31.12.48	c267,000	+	c16,000	26	c776,000	+	c53,400
	San Paulo ...	153½	...	...	...	...	...	...	...	...
	Taltal ...	156	Feb., 1949	11,595	+	2,600	35	68,930	+	10,325
	United of Havana ...	1,301	26.3.49	\$468,061	—	\$62,778	38	\$10,034,437	—	\$3,299,979
	Uruguay Northern ...	73	Sept., 1948	1,072	+	52	12	3,308	+	111
	Canada n National...	23,473	Feb., 1949	9,225,250	+	721,000	8	18,552,500	+	1,547,750
Various	Canada n Pacific ...	17,037	Feb., 1949	6,725,000	+	653,500	8	13,666,750	+	1,363,750
	Barsi Light*	202	Feb., 1949	33,367	+	9,677	48	305,677	+	32,505
	Beira ...	204	Dec., 1948	110,159	—	16,866	13	365,307	+	12,394
	Egyptian Delta ...	607	20.2.49	18,224	—	1,856	47	654,526	+	103,202
	Gold Coast ...	536	Feb., 1949	239,784	+	40,316	48	2,385,740	+	579,253
	Manila ...	...	...	...	...	...	...	...	...	...
	Mid. of W. Australia	277	Jan., 1949	27,203	+	174	31	203,052	+	40,523
	Nigeria ...	1,900	Dec., 1948	418,702	+	77,374	37	3,366,011	+	774,561
	Rhodesia ...	2,445	Sept., 1947	643,980	+	102,833	52	6,787,603	+	612,938
	South Africa ...	13,347	12.3.49	1,400,387	+	70,943	49	66,960,080	+	3,803,797
	Victoria ...	4,774	Nov., 1948	1,452,889	+	60,190	22	—	—	—

*Receipts are calculated @ 1s. 6d. to the rupee